DOCUMENT RESUME

ED 040 100 24 SO 000 029

AUTHOR	Wiggins, Suzanne
TITLE	ECON 12: Teacher's Materials. Units I and II.
INSTITUTION	San Jose State Coll., Calif.
SPONS AGENCY	Office of Education (DHEW), Washington, D.C. Bureau of Research.
BUREAU NO	BR-5-1113
PUB DATE	14 Jan 66
CONTRACT	OEC-5-10-068
NOTE	320p.
EDRS PRICE	EDRS Price MF-$1.25 HC-$16.10
DESCRIPTORS	Curriculum Guides, *Economics, Experimental Curriculum, *Grade 12, *Inductive Methods, Programed Materials, Programed Units, Secondary Grades, Social Studies, *Social Studies Units, *Teaching Guides
IDENTIFIERS	Suzanne Wiggins Helburn

ABSTRACT

The objectives of this experimental 12th grade economics course begin with an understanding that "economic analysis applies a set of basic concepts and their interrelationships to problems (involving) economic scarcity." Fifteen basic concepts are to be learned (e. g., want, markets, money, etc.) as well as the definition and vocabulary of economics. Students will also know how to do and evaluate economic research. The two units cover fifty class sessions. Lessons in Unit I, "What is Economics," deal with scarcity, production, exchange and money, economic exchange systems, circular flow, values, and the definition of economics. The definition and function of the price system, models in social science, the market under certain conditions, industrial market structure, and the auto, aluminum, and telephone industries comprise the lessons of Unit II, "U. S. Price System." Inductive methods are utilized. Instructor's materials for most of the lessons include a content outline, lists of behavioral objectives, summaries, and background materials. Answers to student worksheets are provided for both units, and three multiple-choice tests are provided for Unit I. 16mm, slide, and overhead projectors are required. Related documents: Student Materials (SO 000 030); Revised Student Materials (SO 000 110); Final Report (ED 028 093). (DJB)

BR-5-1113
PA-24
SO

ED0 40100

SO 000 029

ED0 40100

U.S. DEPARTMENT OF HEALTH, EDUCATION
& WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED
EXACTLY AS RECEIVED FROM THE PERSON OR
ORGANIZATION ORIGINATING IT. POINTS OF
VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY

ECON 12

UNIT I: WHAT IS ECONOMICS

TEACHER'S MATERIALS

CONTENTS

Introduction to the Unit

Lesson Plans for Lesson 1 - 7

Examinations and Question Answers

ECON 12 - UNIT I: TEACHERS INTRODUCTION TO UNIT

ISSUED JAN. 1966

Objectives (All of these are long-run objectives of the course. Because the following units will develop these objectives further, few of these objectives will be fully achieved in Unit I.)

1. Students should understand that (1) economic analysis applies a set of basic concepts and their interrelationships to problems involves economic scarcity; and (2) an analysis of an economy involves an application of this conceptual framework.

2. Students must gain some initial facility in the use of these concepts (recognition, discrimination, paraphrasing of definitions) and in relating one concept to another. The concepts are:

   a. wants
   b. resources
   c. scarcity of resources
   d. economic activity to overcome scarcity; production, consumption, exchange, saving, investment
   e. productivity
   f. production specialization, types: product specialization, division of labor, use of capital
   g. comparative advantage
   h. alternative cost
   i. diminishing returns
   j. markets
   k. money
   l. economic system (an economy), the structure of economic institutions
   m. economic decisions: what to produce, how to produce, how to distribute output
   n. economic goals: security, freedom, justice, progress, efficiency
   o. conflict of interest

3. Students must learn a basic vocabulary, including the concepts listed above, as well as some other commonly used words in economics: land, labor, capital, management, factors of production, goods and services, input, output, firm, household, income, wealth, assets, liabilities.

4. Students must learn the definition of economics. They should see that to some extent we can discriminate between what is economics and what is not, but that ultimately, economics is a way of looking at social organization, ~~an~~ abstracting out of certain aspects of the general activity of people (given examples of social activity, students will choose those involving economic problems).

For purposes of this course, economics is defined as the study of the "economic organization" of society, that is, of the way production, exchange, consumption, saving, investment are organized to overcome scarcity. Economics is concerned with the decision-making process which determines economic activity rather than with the activity itself. Economics can be broken down into basic and applied research. Basic research involves an analysis of the economic system:

1. Microeconomics: Study of individual production and consumption units and of the what, how, for whom decisions. It requires observation of behavior of economic institutions and development of theories regarding the behavior of these institutions.

2. Macroeconomics: Study of the total system and of the determination of aggregate income. It requires measurement of aggregate statistics and a theory of aggregate income determination.

Applied research involves solving problems related to decisions which must be made by business, government or citizens; it relates to both micro and macroeconomics:

1. Evaluation of the effectiveness known policies in achieving given objectives.

2. Invention of new solutions to economic problems.

5. Students should recognize that rational decision making (careful choice) is required to overcome scarcity. Students should be able to use a rational decision making procedure which involves

   1) specification of objectives
   2) specification of constraints on achieving objectives
   3) specification of alternative solutions
   4) calculation of alternative costs of different solutions
   5) choice of optimal alternative.

6. Students should recognize that conflict of interest, which grows out of the existence of scarcity, is a fact of life that they must learn to adjust to.

7. Students should recognize that the appropriateness of a policy or of some given economic behavior depends on the goals and interests of the person judging the policy or the behavior.

The purpose of Unit I is outlined in the seven lessons of the unit:

1. Scarcity
2. Production
3. Exchange and money
4. Economic exchange systems
5. Circular flow

6. Values, economic conflict and the role of economic institutions in conflict resolution
7. A definition of economics

Each of the first six lessons is designed to present the student with an aspect of the nature and scope of economics. In lesson No. 7, the student will draw together the material from these six lessons and, with the aid of the teacher, induce a definition of economics.

Lesson No. 1 presents the central problem with which economics is concerned and introduces the "want-satisfaction chain." This lesson presents the basic economic activities of production and consumption and begins to build a vocabulary of economic terms.

Lesson No. 2 presents an analysis of the principal solution to the scarcity problem (specialized production) and elaborates this analysis by introducing the concepts of the organization of production, diminishing returns, absolute and comparative advantage, and alternative cost.

Lesson No. 3 expands the concept of specialization with an analysis of exchange (a product of specialized production) and the role of money as a means of making exchange more efficient. Money provides a group of specialized services which any developed economy must have to function efficiently. The existence of money creates the possibility for separating the act of saving from the act of investment.

Lesson No. 4 develops the concept of an economic system by presenting a comparison of two economies, one primitive and the other our own. The comparison provides (1) a basis for defining an economic system and (2) a method for studying an economic system. The economic system, or economy, of a society is (1) the total group of economic institutions which carry on the basic economic activities and (2) the exchange relations between these institutions. It is usually possible to construct a diagram of these institutions and the exchange relationships between them. Such a diagram is a useful pedagogical tool to aid in explaining the economic organization of a society and the basic economic interdependencies between institutions.

Lesson No. 5 begins with an inductive learning experience in which the students derive an exchange diagram for the U. S. economy. This is a circular flow diagram which describes the exchanges between firms and families. This circular flow diagram is then used as a basis for comparing the U. S. with the Tsimshian and the Soviet economies. This allows the student to expand the definition of economics to include the study of the operation of an economy as a complete system, i.e., macro-economics. The circular flow diagram is then converted into an animated model (8 min. film) of the U. S. economy, which is used to explain the salient macro-economic features of the economy.

Lesson No. 6 extends the study of economic systems to an evaluation of the efficiency of the system, that is, to a consideration of the relation between the values or goals of the society and the economic organization of the society. The end objectives or goals of economic activities are classified into five categories: economic progress, economic security, economic justice, economic freedom, and economic efficiency. For any one society some of these goals or values will be more important than for another society. Because of scarcity there is no society where it is possible to satisfy all these goals. The relative importance of these goals is reflected in the economic structure of a society. In this lesson students will compare the value system of the pre-Columbian Tsimshian Indians with that of our own society and will study the relation of these values to the economic organization of these two societies.

This lesson also points to the existence of conflict of interest (between individuals and groups in the society) over the use of scarce resources and over the relative importance of conflicting goals for the society. By referring back to the comparison between the Tsimshian and contemporary U. S. economies, students will learn that conflicts of interest are resolved through market, government, or traditional decisions. Through class debate on the 'superiority' of the Tsimshian versus the U. S. versus the Russian economy, students will recognize that the judgment about "superiority" is a value judgment and that a person's judgment can be "wrong" only if there is inconsistency between his values and available economic data.

Lesson No. 7 begins with a micro-program which presents, in a formal way, the definition of economics contained in the first six lessons. The student is then given a series of mis-statements about economics, which are common among adults. He will respond to these statements in an essay, dialogue, or other written form, by pointing out and correcting the errors.

Introductory Reading for Teachers

The success of this unit rests with the teacher. It is very important for the teacher to understand the rationale behind the organization and design of lessons in order to test the effectiveness of the unit in introducing students to the nature of economics. The following two essays are reproduced here to provide you with some back-ground reading on the definition of economics. The first essay of economic literature is Lionel Robbins' "The Nature and Significance of Economic Science." The second essay, which first appeared in the American Anthropologist, is Robbins Burling's "Maximization Theories and the Study of Economic Anthropology." In order to avoid confusion of names, it should be kept in mind that two men are involved, Lionel Robbins and Robbins Burling.

Lionel Robbins' essay was written to establish the area of social activity which constitutes the subject matter of economics and to analyze the nature of the science. The essay is now thirty-five years old, but it remains the basis of most discussions on the nature of economics. It was written to challenge what Robbins considered to be misconceptions about the nature of the economics discipline. Until Robbins presented his analysis, most economists believed (1) that the subject of economics was the material aspect of man's existence; (2) that economics was concerned with the achievement of "economic ends," and (3) that these ends could be measured in absolute quantities. Robbins analyzed each of these propositions and concluded that economics is not limited to the material aspect of man's existence, nor is it solely concerned with purely "economic ends" which can be reduced to absolute quantities. "Economics," he said, "is the science which studies human behavior as a relationship between ends and scarce means which have alternative uses."

In the three decades which intervened between the publication of Robbins' book and the appearance of Burling's essay, many of the misconceptions which Lionel Robbins had supposedly laid to rest reappeared. Burling once again examines these misconceptions and then proposes a model for the analysis of society which incorporates Robbins' definition of economics. It is a general exchange model which interprets all social actions as exchanges involving the matching of some means to ends.

The source of Burling's interest in the theoretical foundations of economics is the need of anthropologists for a theoretical foundation for examining the economic activity of societies at all levels of economic development. The growing interest of anthropologists in this field arises from the manifold problems which newly developing societies are facing and for which traditional economics has had no ready answers.

Burling begins by stating five definitions of economics and analyzing the implications of each definition. The definitions are: (1) Economics deals with the material means to man's existence, (2) Economics studies the production, distribution and consumption of goods and services, (3) Economics (when used by anthropologists) treats in primitive societies those areas of life which economists study in ours, (4) Economics is the study of systems of exchange, whatever the particular institutional arrangements surrounding them may be, (5) Economics is the study of the allocation of scarce means to multiple objectives or, more broadly, "the science which studies human behavior as a relationship between ends and scarce means which have alternative uses." (Robbins, p. 16)

Burling refutes the validity of the first four definitions and presents a lucid argument for reaffirming the validity of the fifth, as originally stated by Robbins. He then enlarges the application of economics, so defined, to include the study of any social system or social sub-system designed to allocate anything which is scarce, be it goods, services, love, prestige or power. The model he introduces for this purpose is that of a system of exchange. By viewing society as a system of exchange in which men try to act so as to maximize satisfactions, Burling presents us with a model which allows us to study any group of societies on a comparative basis. Thus the concept of a socio-economic system enables us to analyze society as a system of institutions devised by men to satisfy their psychological needs. The social institutions, and the exchange relationships which tie them together, form a structure which can be studied in whole or in part. A market economy can be studied as a macro-structure which operates to generate some level of national income, or it can be studied in its parts. For example, we can study the firm as an institution with a particular structure and, beyond that, a specific industry which also has a unique structure. Thus the concept of a socio-economic system is a useful pedagogical tool for enlarging the student's comprehension of the meaning and use of economics. In particular, this exchange model can be used to analyze simple, pre-monetary economies; such an analysis forms the basis for a comparison with our own economic system and this model is used in Lesson No. 4 on Economic Systems. Hopefully, the student will see that our own socio-economic system, with all of its complexities, is simply the system we have developed to satisfy our unlimited desires for goods, services, love, prestige and power.

Once the idea of an economy as a system is grasped, it should not be difficult to bring the student to the realization that the institution which dominates our system is the market and that most of our desires or wants can only be satisfied if we engage in market transactions. We must sell our services in the market and satisfy most of our wants by purchases in the market. Indeed, the goods and services (as well as the love, prestige and power) we command are often determined by the skill with which we function in the market.

Because the market dominates our socio-economic system, the economic theory we must use for our own economy is principally the theory of the market. Because a fully developed market economy uses money, the function of prices in determining how we allocate scarce resources is central to understanding how our physical and psychological needs are satisfied. The use of money also allows us to quantify the study of our economy and to use the ideas of costs and profits to determine whether or not we are efficient in allocating our scarce resources.

If the student is able to move from the general idea of a socio-economic system to the specific idea of a socio-economic system based on the market, it should be possible for him to avoid the misconception that economics is only the study of what we buy and sell (dull stuff to most students).

Finally, there is one clarification which should help the student better to understand the nature and purposes of economics: when we use such terms as "economic activity" or refer to an economic activity such as production, consumption, saving or investment, we are using abstract concepts. These are useful and necessary words in any economic discourse but the student should always keep in mind that there is no purely economic activity, rather there is an economic aspect to general social activity, such as production; its economic aspect might seem exclusive but it always has a social and political aspect, perhaps even a religious aspect as well.

The phrase "economic activity," which will be used throughout the course, is simply shorthand for "the economic aspect of social activity." The economic concepts and models to be used in the course are techniques of abstracting the economic aspect of social activity. They allow us to speak of economic activity without having to concern ourselves with such things as political or religious questions. We should, however, make certain the student doesn't take the theoretical concept or model for reality and forget that these "economic activities" are imbedded in the totality of our socio-economic system.

If the student can keep the distinctions presented in this unit clearly in mind, he will be a rather sophisticated observer of society and will have an insight into the nature of society and the nature of the intellectual tools which social scientists have developed for studying society.

LESSON NO. 1

SCARCITY

4 DAYS

Table of Contents and Specifications

Instructor's Materials

1. Content Sequence
2. Long-Term Behavioral Objectives
3. Short-Term Behavioral Objectives
4. Summary Chart - Content and Objectives
5. Lesson Sequence Chart
6. Lesson Sequence
7. Slide Show No. 1
8. Overhead transparencies for want satisfaction chain

Equipment Needed

1. Film strip projector
2. 10 X 10 Overhead projector

Student Materials

1. Worksheet No. 1
2. Short stories by E.M. Forster and L. Tolstoy

LESSON 1 **CONTENT OUTLINE**

ECON 12 UNIT I

3 DAYS

ISSUED JAN 1966

1. Men have wants. They are of two kinds:
   a. Physical--basic needs for food, clothing, shelter;
   b. Psychological -- needs for the comfort of mind and body, including needs for prestige, power, love, security.

2. For most men, wants are never satisfied:
   a. Physical needs necessarily keep coming back - we get hungry, shoes wear out - and the pattern repeats itself;
   b. Other psychological and wants change our physical environment and as we pass through the life cycle;
   c. new psychological and physical wants are created by technological change which make it easier to satisfy simplier wants and create new desirable goods and services.

3. The goods and services with which we satisfy wants come from resources. Usually, we take a number of resources (inputs) which we combine (production) to produce goods and/or services (output).

4. This process of satisfying wants is shown visually by the "want satisfaction chain".

5. Economists often label "input of resources" as "factors of production". These factors of production are divided into three categories: land, labor, capital. The outputs of the process of production are divided into two categories - (a) goods and (b) services.

6. The gap between what people want and the resources available to fill the want is, in economist talk, scarcity.

7. Scarcity does not necessarily mean "few". It means "not enough to satisfy the want." We can have many of a given resource and yet still have scarcity because:
   a. wants still exceed resources, or
   b. resources are somehow "locked up" and not available to be applied to wants (they must be dug up, transported, etc., before they become available).

8. A resource may be scarce for several reasons:
   a. it may be scarce in one place and not in another (example, water;
   b. it may be scarce one time but not at another (example, buggy whips),
   c. for one group of persons but not for other groups (example, camels).

9. There are five ways of overcoming scarcity:
    a. produce more from present resources;
    b. increase the amount of resources;
    c. make the goods and services produced more want satisfying;
    d. redistribute what is produced;
    e. reduce the number of wants.

10. The first four ways involve physical resources, changing the quantity, quality, or distribution of goods and services. The fifth involves human nature, changing people's state of mind of body.

11. Economics is mainly concerned with the study of the first four - the material solutions of the scarcity problem.

12. In applying these solutions, we are seeking to achieve the economic goals of society:
    a. security
    b. freedom
    c. justice
    d. progress
    e. efficiency

Long-term Behavioral Objectives

1. Given a list that contains at least six examples that include both physical and psychological wants:
    a. names the two categories of wants
    b. categorizes the items in the list

2. In own words, explains why the two categories of wants can never be permanently satisfied and gives examples of each, for example:
    a. physical wants are cyclical; example, three meals a day,
    b. psychological wants are self-proliferating; as one want is satisfied, it nourishes another because of the insatiability of human desires or because it creates new conditions with new wants; examples, a coat in the new fashion color, more freeways because more people get cars.

3. In completing the want satisfaction chain, identifies resources, factors of production, inputs, outputs, land, labor, capital, goods and services. Given ten examples of same, categorizes them correctly.

4. Defines "scarce resources." Answer should include, in own words,"A resource of which there is not enough to satisfy wants."

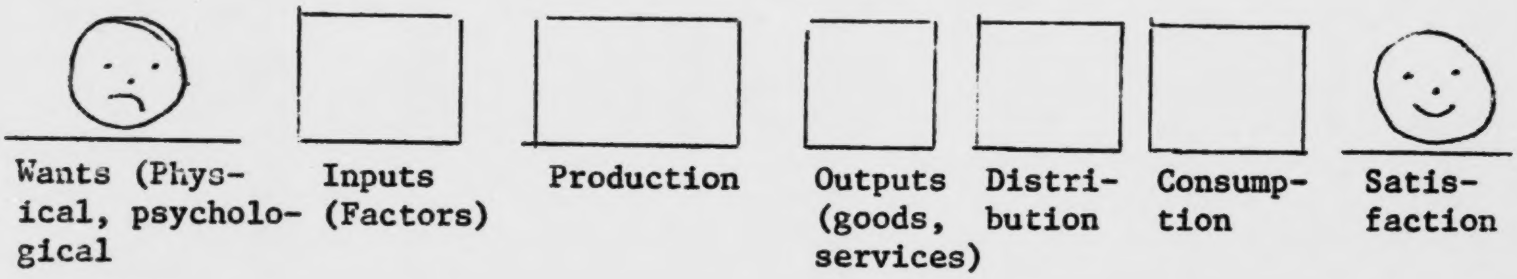
5. Given examples that illustrate the five solutions to the scarcity problem, states, in own words, the generalization for each. (i.e., (1) Produce more from present resources; (2) Increase amount of resources; (3) Make goods and services more want-satisfying; (4) Redistribute what is produced; (5) Reduce number of wants). Gives examples of each.

Short-term Behavioral Objectives

1. Given examples of typical physical and psychological wants, in a slide show presentation:
    a. identifies them as physical or psychological;
    b. recognizes that it sometimes is hard to put examples in only one of the two categories of physical or psychological;
    c. explains why each cannot be permanently satisfied (how)?

2. Following reading of newspaper articles, in classroom discussion, supplies examples of wants and places then the categories of:
    a. physical
    b. psychological

3. Derives in classroom discussion, want satisfaction chain in which following are listed:
    a. wants - physical and psychological
    b. resources - inputs, factors of production
    c. production
    d. outputs
    e. distribution
    f. consumption
    g. satisfaction



4. Given a list that includes "can't tell" items, identifies scarce resources. (Worksheet I, Frame 9, Crusoe problem)

5. After reading Forster's story, Mr. Andrews, in classroom discussion:
    a. lists at least four examples of wants contained in the story;
    b. categorizes them as physical or psychological.

    In classroom discussion of Forster's story, identifies the passage(s) that are the moral of the story as it touches upon economics. (e.g., "Though he had all that he expected, he was conscious of no great happiness...In that place, their expectations were fulfilled but not their hopes.."We desire infinity and cannot imagine it.") or,......

    In classroom discussion of Tolstoy's story, identifies the moral of the story as it touches upon economics.

6. In classroom discussion, given the concept of scarcity, induces the five solutions to the scarcity problem.

7. In classroom discussion, induces that scarcity and its satisfaction are at the heart of the study of economics.

8. Given a list of resources, categorizes them correctly as land, labor, or capital.

	A	B		
Concept	Essential Material (long-term)	Supportive Material (short-term)	Purpose of B	Learning Device
Wants	1. Two Kinds (a) Physical (b) Psychological	1. Identify examples of wants; induce two categories of wants	To make student aware of the economic aspect of familiar experience.	Newspaper articles slide show
	2. Neither ever satisfied because wants are (a) cyclical (b) ever-growing	2. Derive "never satisfied" characteristic of (a) and (b). Explains, gives examples.		
Resources	3. Resources = inputs = factors of production = land, labor, capital, output = goods & services.	3. Induce "Want Satisfaction Chain"	Show relations learn vocab; input, output, production, goods & services, factors of production. Induce definition	Slide Show Worksheet Overhead Transparencies
Scarcity	4. Definition of a scarce resource.	4. Identifies e.g.of land, labor, capital		
	5. Five solutions	5. Identify examples	Introduce the scope of economics.	
		6. Induces solutions (5) to scarcity.		
		7. Derive first definition of economics (Study of what is required to overcome scarcity)	Reinforce concept of scarcity and its relation to human nature.	Worksheet Short stories Forster's *Mr. Andrews*, Tolstoy's *How Much Land Does A Man Need?*

LESSON NO. I

SCARCITY

LESSON SEQUENCE CHART

CONTENT	TEACHER	VISUAL
Wants: 1. Two kinds - physical and psychological 2. Never satisfied because they are cyclical and ever charging (growth) DAYS 1 AND 2	Introduces lesson with a short talk and shows slide show No. 1 Aids students in completing Frames 1-3.	Slide show No. 1 (Title not yet determined) Chalk Board - List of wants drawn from slide show.
Resources: Resources=Inputs=Factors of Production=Land,Labor and Capital Inputs-Production-Output Outputs-Goods and Services Wants Satisfaction Chain DAYS 2 AND 3	Present transparencies of want satisfaction chain. Ask questions which will lead students to identify components of the chain Check student's work on Frame 4, check students' homework on Frame 5, and correct in classroom discussion	Overhead transparency sequence of want satisfaction chain
Scarcity: Definition of a scarce resource The five solutions to the scarcity problem Definition of economics	Aid students in completing Frames 6, 7, and 8 Check students' homework on Frames 9 and 10, and correct in classroom discussion. Aid students in completing Frame 11 with a classroom discussion of the short story of stories. Conclude lesson by using the transparencies of the want satisfaction chain to induce the five solutions to scarcity problem; define economics (Frame 12).	Overhead transparency sequence of want satisfaction chain

WORKSHEET	HOMEWORK	EVALUATION
Frame 1-categories of wants listed on chalk board, general statement about wants. Frame 2-wants listed on chalk board placed in categories given in Frame 1. Frame 3-wants taken from newspapers also placed under categories in Frame 1.	Day 1 1. Two examples of wants drawn from newspaper articles; 2. Short stories by Forster and Tolstoy due on day 4.	Frame 3; end of lesson, self-graded test; end of unit test.
FRAME 4 - want satisfaction chain	Day 2 Frame 5 to be completed for day 3.	Frame 4; end of lesson, self-graded test; end of unit test
Frames 6, 7, and 8 Frames 11 and 12	Day 3 Frames 9 and 10 to be completed for day 4.	Frame 12; end of lesson self-graded test, and end of unit test.

This lesson has four teaching learning instruments: 1) a film strip, 2) a set of overhead transparencies, 3) a student worksheet and two stories: E.M. Forster, Mr. Andrews; L.Tolstoy's, How Much Land Is Enough. The lesson will require a film strip projector and an overhead projector.

Day 1

1. Instructor can make any intorductory remarks about the lesson which he feels will help to orient the students.

2. Show film strip and conduct discussion which follows:

The beginning of the discussion should be general. The film strip ends as follows: "Man doesn't want much - just enough to be happy." Two questions: How much is enough? How does he get it? After the students discuss these, it might be good to ask, "What is the point of the film strip and what does it have to do with economics?" When it is clear that no one is certain about the answer, the instructor can propose an analysis of the film strip in order to get an answer.

This analysis can begin by having the students name the things which the film strip showed that people wanted. These should be written on the chalk board. The list should illustrate each of the points made in the film strip:

1. man has physical wants
2. man has both physical and psychological wants which arise from:
   a. psychological need
   b. the changing technology in which he lives
3. wants change with age
4. some wants are private, other public.

The instructor's questions, during this part of the discussion should be designed to elicit a list of wants which can be placed in categories (Frame 1) such as - physical, social, psychological, basic, secondary, public, private, etc. The class should finally decide that physical and psychological are the two basic categories, but that wants are often both physical and psychological. Frame 1 should then contain a statement that wants are both physical and psychological, that they change with age, that they change as society changes, that some are satisfied privately and some publicly.

3. Frame 2 can be used to clarify the points in the general statement.

4. Homework assignment:
   a. The students are to bring to class, the next day, examples of two wants which they have taken from newspaper articles - not advertisements.

   b. They are to begin the short story, or stories, and have them read in two days.

Day 2

1. Frame 3 - During classroom discussion, student will offer examples of wants drawn from newspapers and categorize them, as he recites, using the categories in Frame 1.

2. Present the want satisfaction chain, using the overhead transparencies. Frame 4 is a test frame for this exercise and students should complete it as follows:

3. Homework - students to complete frame 5.

Day 3

1. Review frame 5 to clear up any confusion and to discuss the problems which arise when an item falls into two categories, e.g., inputs and outputs. Students should see that no category is clear enough to avoid marginal cases.

   If the students make errors in categorizing items according to land, labor, and capital, or goods and services, the reasons for these errors should be discussed and the errors corrected.

2. Complete frames 6, 7, 8

3. Homework - frames 9 and 10

Day 4

1. Clarify any problems with regard to frames 9 and 10.

2. Complete Frames 11 and 12 during classroom discussion.

   For item 3 of frame 11, class responds with at least four examples of wants from Forster story and categorizes them as physical or psychological. Class also identifies passage list in short-term behavioral objective No. 5.

   If item 4 is used, class identifies the moral of the story. They should discuss whether the Devil represents man's evil nature or whether it is simply man's nature and has nothing to do with good and evil.

For frame 12, the five basic ways men have tried to make resources = wants are:

1. They have tried to increase the amount of scarce resources.
2. They have tried to produce more with the resources available.
3. They have taken what has been produced and divided it so that it satisfys more wants.
4. They have tried to produce different things which provide more satisfaction.
5. They have tried to limit the number of wants.

The economic goals of our society are: security, freedom, justice, progress and efficiency.

Our first definition of economics is:

Economics is the study of how men have tried to overcome scarcity by making resources = wants.

LESSON NO. 2

PRODUCTION SPECIALIZATION

5 DAYS

Table of Contents and Specifications

Instructors Materials

1. Content sequence
2. Long-term behavioral objectives
3. Short-term behavioral objectives
4. Summary chart - content and objectives
5. Lesson sequence chart
6. Lesson sequence
7. Film - Production

Equipment Needed

1. 16 mm. film projector
2. Paper, pins, and stapler for production demonstration

Student Materials

1. Program on Efficiency
2. Worksheet No. 2
3. Program on Absolute and Comparative Advantage

LESSON 2 - PRODUCTION SPECIALIZATION

CONTENT SEQUENCE

1. To close the gap between wants and available goods and services, men have persistently tried to make more efficient use of productive resources.

2. This requires the choice of the most efficient process of production. In order to make a rational choice, it is necessary to calculate the production efficiency of each process of production, to compare their efficiency, and to calculate the relative efficiency of each process.

3. Production efficiency is a measure of how much output is obtained for some unit of input, e.g., how many gears are produced from a ton of steel. An important measure of efficiency is output per unit of labor input, e.g., output per man hour.

4. When we wish to compare the efficiency of two operations it is convenient to use money as the unit for measuring inputs. The cost of all the inputs equals the cost of production. By using money to measure all the inputs, it is possible to calculate how much output is obtained for each dollar of input, regardless of what the input is, or how much each unit of output costs. The process which yields the lowest cost per unit of output is the most efficient method of production.

5. The most important way production efficiency (productivity) is increased is through specialization.

6. The three kinds of specialization are:
   a. Resource specialization -- i.e., the specialized use of labor, land, or capital to produce one product.

   b. Division of labor } Specialization of the production process

   c. Use of capital

7. In resource specialization, inputs are used for special products. This kind of specialization occurs when only one kind of crop is grown on a piece of land, or when an individual takes up a specialized occupation, i.e., carpenter, electrician, or surgeon.

8. Division of labor occurs when the process of making a product, e.g., shoes, is divided into many steps. Instead of one man making the whole shoe, the task is divided so that one might cut the leather, another stitch the uppers, another sew in the welt, etc. Often, this kind of specialization involves the division of a production process into a series of operations so simple that they can be handled by workers with little or no training. Thus, the division of labor, using assembly line techniques, made possible mass production with unskilled or semi-skilled workers.

9. The use of capital is the use of tools, machines, and buildings to obtain greater production efficiency. These capital goods range from simple things like rakes and hoes to giant electronic calculators, factories and office buildings. Without capital, labor efficiency could not improve greatly and productivity would always remain low. The division of labor tends to create the need for special tools (capital goods) and these tools create a need for even greater division of labor. Thus, specialization of all the factors of production is a constantly self-reinforcing process.

10. When capital goods are used, we say that production is round-about. It is round-about because production takes place in two stages, first, the capital goods are produced, and second the capital goods are used to produce consumer goods.

11. Specialization maximizes output by having each factor of production (man, piece of land, capital goods) produce what it can produce best. We can calculate which factor should do which job by using the Theory of Absolute and Comparative Advantage.

12. Because factors of production are not perfect substitues for one another (they are not completely interchangeable), any one resource can help produce some goods or services more efficiently than it can produce others.

    The theory of absolute and comparative advantage proves that output is increased through the specialized use of the factors of production, and it provides rules for determining how to allocate resources between jobs.

13. When a factor is a more efficient producer of a particular output than another factor, the factor is said to have an absolute advantage in producing that output.

14. When one factor is a more efficient producer of two or more outputs than another factor, the theory of comparative advantage applies. Even though the first factor can produce both outputs more efficiently, than can the second factor, production is maximized by having each factor produce that output for which it has a comparative advantage. For example, assume; (1) two factors A and B, and two outputs X and Y, (2) that factor A can produce both X and Y more efficiently than can factor B. Then, in order to maximize production, assign factor A to the output for which is has the greatest advantage over factor B, assign factor B to the other output. If factor A has the same advantage over factor B for both X and Y, there is no comparative advantage and output will be the same regardless of how the factors are assigned.

15. When the theory of comparative advantage applies, the assignment of production, factors to outputs can be made by computing the efficiency of each possible production process, relative to the other production processes.

16. Whenever we calculate the cost of a given output in terms of the other outputs which could be produced by the factors used in producing the given output, we are calculating the alternative cost of the given output.

For example, if an acre of land can produce either 10 bushels of wheat or 20 bushels of corn we can express the alternative cost of wheat or corn as follows:

1 bushel of wheat costs 2 bushels of corn
or
1 bushel of corn costs 1/2 bushel of wheat.

17. When an output is produced in accordance with the theory of comparative advantage it is produced at the minimum alternative cost.

18. In any productive process which combines two or more factors, one of which is fixed, there is a limit to the efficiency of production. As factors of production are added, at some point the resulting increase in output will be smaller for each additional unit of input. This situation is described as the law of diminishing returns.

For example, assume, for a given output, that

1. It is produced in a limited space, and
2. efficiency of production can be increased by the addition of labor inputs

Then, at some point, additional labor inputs will bring smaller and smaller increases in output because as men are added to the limited space there will finally be so many of them that they will get in each other's way.

The law of diminishing returns can also be shown by the illustration of growing potatoes in a flower pot. One potato plant will produce a given weight of potatoes, and two potato plants might produce a slightly greater weight, but three plants will produce less than one and four or more would probably produce no potatoes at all.

Economists are fond of using this illustration to show that if it were not for the law of diminishing returns, the world's food supply could be grown in a single flower pot.

LONG-TERM BEHAVIORAL OBJECTIVES

The student:

1. Given data on one input and the levels of output of a production process, will calculate the productivity ratio for the one input.

2. Given data for a series of different production processes for the same output, which gives the dollar costs of using different inputs, will calculate the dollar cost of the output for each production process (set of inputs) and ranks the production methods in descending order of cost (efficiency). The data will include irrelevant information.

3. Given examples of each type of specialization, will label them as examples of 1) resource specialization, 2) division of labor, or 3) use of capital, or 4) combination of 1,2, or 3, and will describe why productivity is increased in each instance.

4. Given data on the productivity of two inputs producing two outputs, calculates the efficiency of each production process, relative to the other production processes, calculates the alternative costs for each production alternative, and chooses the most efficient allocation of inputs.

5. Given examples of absolute and comparative advantage labels them correctly.

6. Will write a one sentence definition of alternative cost which states that the cost of any given output can be expressed in terms of the alternative outputs which could have been produced with the same amount of inputs used to produce the given output.

7. Given an example of a production process with an increase of units of one input and a decrease in the additions to output, will label it as an instance of the law of diminishing returns.

   Will, in own words, define diminishing returns (additions to output are less for each additional unit of one given input) and given an example of diminishing returns and why, in this example, returns diminish, e.g., workers get in each other's way.
   Given data on three production processes, one of which shows diminishing returns, will chose the one showing diminishing returns and indicate at which level of input diminishing returns set in.

SHORT-TERM BEHAVIORAL OBJECTIVES

The student:

1.2. Given appropriate data on production alternatives
   a. Expresses productivity ratio in simplest form for selected inputs.

   b. Identifies from alternatives the definition of "total productivity." (Alternatives to include definition of "one-factor productivity.")

   c. Expresses total productivity in simplest form.

   d. Calculates relative efficiency of two production alternatives after reducing data to obtain total productivity for each alternative.

Given data on output and input for one production alternative and the relative efficiency of a second production alternative, calculates the output of the second alternative for a given input. (The input specified for Alternative 2 to be in similar units but different quantity from that of Alternative 1; e.g., Input 1 might be in "per ton" while Input 2 is 12 tons).

3. Given a table with headings and after seeing the film on production.
   a. List at least six examples of specialization in production.
   b. Specifies the measure of productivity for each example.
   c. Explains why each example increases productivity.
   d. Labels each example as an instance of:

      (1) resource specialization
      (2) division of labor
      (3) use of capital

4-6. Performs a specified production task, with varying labor and capital inputs, and records inputs and outputs on a schedule. From this recorded data, induces:
   a. effect on output of various inputs
   b. effect on output of division of labor and use of capital
   c. the law of diminishing returns

7. Given a "word problem" involving both absolute and comparative advantage:
   a. distinguish between them by identifying examples of each.
   b. calculates which production alternative has the comparative advantage by comparing the relative efficiency of two alternatives.
   c. identifies the pairing of production means and outputs which maximizes production by use of comparative advantage.

Given a "word problem" involving production means A and B, their outputs for one production activity a_1 and b_1, the output a_2 for the second production activity, and absolute advantage for A in both production activities:

a. state the maximum value of b_2

b. calculate the maximum value of b_2 if B has the comparative advantage in activity a.

8. Given data on two inputs and two outputs, computes alternative cost of each output.

9. Given data on a production process with varying inputs and outputs, which is an instance of diminishing returns, calculates a production schedule, identifies the production process as an instance of diminishing returns and identifies the level of inputs at which diminishing returns become operative.

SUMMARY CHART - CONTENT AND OBJECTIVES

Lesson 2 - Productivity

Concept	A Essential Material (long-term)	B Supportive Material (short-term)	Purpose of B	Learning Device
Productivity - a way of solving the scarcity problem	1. Definition 2. How calculated	1. Compute productivity 2. Compute relative efficiencies	Reinforce definition "	Program
Specialization - means of improving productivity	3. Three types: (a) resource specialization (b) division of labor (c) use of capital	3. Identify examples and types of specialization; explain why they increase production; suggests measure of productivity	"	Film Table to analyze film
Production Function and Law of Diminishing Returns		4. Derive production function - relation between input and output. 5. Identify factors affecting input/output 6. Division of labor	Learn concepts of productivity specialization and diminishing returns by direct experience	Production Task Production schedule
Theory of comparative advantage gives basis for making most efficient allocation of factors of production	4. Comparative advantage	7. Compute absolute and comparative advantage by computing relative efficiencies	Show usefulness of concept	Program
Alternative cost gives real cost of producing any output	5. Alternative cost 6. Diminishing returns	8. Compute alternative cost of two outputs 9. Compute production schedule and show it is an instance of diminishing returns	Reinforce definition and convince student of its importance	Worksheet problems

LESSON NO. 2

PRODUCTION SPECIALIZATION

LESSON SEQUENCE CHART

CONTENT	TEACHER	VISUAL
Efficiency: 1) Meaning, 2) Ratios, 3) Inputs-outputs, 4) Man/Hrs. 5) Identify and compare ratios, 6) total productivity (total cost as measurement of input) DAY 1	Explication of particular frames of program for students who to meet criterion level on test, of Program 5-10 min. lecture designed to relate program to film and to remainder of lesson	
Specialization 1. Resource specialization 2. Division of labor 3. Use of capital DAY 1-2	Aid students in completing Frames 1, and 2	Film on Production Specialization
Absolute and Comparative Advantage DAY 2-3	Relates program to film and reviews program	
Organization of Production, Diminishing Returns DAY 3	Organize production demonstration; aid students in completing Frame 3. Aid students in completing Frames 4-8.	
Alternative Cost	Discussion of theory of alternative cost and aids students in calculating alternative cost. Aid students in completing Frames 8, 9 and 10. Administer self-graded test on Lesson No. 2.	

WORKSHEET and/or PROGRAMS	HOMEWORK	EVALUATION
Program on Efficiency	Following end of lesson No. 1 Program on Efficiency	Criterion test on Program
Worksheet: Frames 1, 2 - analyze film for types of specialization, measure of productivity, and reasons for increase of productivity	Worksheet: Complete frames 1, and 2 if necessary	Frames 5 and 6, self-graded test on Lesson No. 2, and Unit I exam.
Program on Absolute and Comparative Advantage	Program on Absolute and Comparative Advantage	Criterion test on Program
Worksheet: Frame 3 - students construct production schedules from production demonstration	Worksheet: Frames 4-8	Self-graded test and Unit I exam
Worksheet Frames Worksheet: Frames 8,9, and 10, problems on absolute and comparative advantage, alternative cost, and diminishing returns.		Self-graded test and Unit I exam

LESSON 2 - PRODUCTION SPECIALIZATION

Day 1

1. Homework for night before the first day of the lesson is the program on efficiency.

2. Begin class with a review discussion of the efficiency program to insure that any misconceptions are clarified. Relate program to film by telling students to think of the efficiency of the various production processes.

3. Show film on specialization.

4. The remainder of the period will be spent on the worksheet which provides for a discussion and analysis of the film. The purpose of this discussion is to enable the class to complete a table (Frame 1) for homework which analyzes the the film by:
   a. identifying the examples of specialized production
   b. giving the appropriate measure of productivity for each example
   c. giving an explanation for the causes for increased productivity in each example.

   The answers to these questions can be organized in a table like the one given below. In order to help the students carry out the analysis, the teacher should ask questions similar to the following:
   1. What major developments were shown in the film which made possible increased productivity of resources?
   2. For each of these changes in the method of production:
      a. How would you measure the increase in productivity?
      b. What causes the increase in productivity?
   3. What term is used to describe the changes in the method of production which increased productivity? (ans: Specialization of production).
   4. Were there any kinds of specialization left out of the film? (ans: trade between countries or regions to exchange commodities which are not available locally, automation and cybernation).

In preparing students to complete the table, the teacher might assist the students by filling in the table for one or two of the examples. As a guide to what is desired, the table below is complete for serveral examples.

Analytic Table

Major developments increasing productivity	Appropriate Measure of Productivity	Explanation of the causes of the increase in productivity
Age and sex specialization	output/man-hr.	physical traits are different. People are not perfect substitutes for one another.
Domestication of plants and animals	output/man-hr. output/acre output/seed output/animal	Genetic changes in plants and animals, taming and training of animals; reorganization of production; using different animals and plants for specialized purposes.
Skilled craftsmen	output/man-hr. quality of production	Training and experience (apprentice learns the secrets of the craft); use of specialized tools
Division of labor - needle factory production	output/hr. output/man hr.	Break down process into 8 tasks; each man learns one task well; shop is organized to save time.
Mechanization	etc.	etc.
Assembly line	etc.	etc.
Standardized parts	etc.	etc.
Specialized industries	etc.	etc.
Round-about production	etc.	etc.

Day 2

1. Answer student questions on Frame I.

2. Complete Frame 2.

Frame 2 - continues this analysis by requiring the students to place the examples of specialization, listed in the table, into three categories, grouped according to the reasons why these examples increased productivity. The students will then write these reasons in their own words.

3. When Frame 2 is complete, students should be given the program on absolute and comparative advantage. This may be started in class and any frames which are not completed should be assigned as homework.
The program on absoulte and comparative advantage gives the theoretical justification for specialization: In the film, the students will have observed instances of specialization which clearly illustrate absolute advantage. The review discussion of the program which begins Day 3 should include references to well known instances of comparative advantage, e.g., showman Billy Rose was the world's champion typist as well as a remarkable able producer of Broadway shows. Obviously, it paid him to hire a typist much less able than himself to do his typing while he produced shows.

Day 3

1. Begin class with a short review discussion of the program on absolute and comparative advantage.

2. Complete Frame 3

Frame 3 provides tables for constructing two production functions which will be derived from a classroom demonstration.

PRODUCTION DEMONSTRATION

The purpose is to enable the students to demonstrate to themselves the relation between input and output in a production process, the effect which specialized production has on productivity. In this demonstration, specialization is introduced into the production process by:

1. the division of labor
2. the organization of labor
3. the use of capital goods
4. individual differences in skill

The demonstration will consist of one simple production process, performed with and without the use of a unit of specialized capital equipment:

A. without specialized capital - collating six sheets of paper, pinning them together, underlining a caption on the top sheet and placing pinned sheets in a pile.

B. With specialized capital - same process except that the six sheets are stapled rather than pinned.

The data from this demonstration will be entered on two tables (shown below) placed on the chalk board. These tables will provide the data for constructing productinn functions for the two production processes. They will show the functional relationship between varying inputs of labor and output.

Process A (pins)				Process B (stapler)			
Number of workers	Total output production			Number of Workers	Total output production		
	group 1	group 2	ave.		group 1	group 2	ave.
1							
2							
3							
3 A*							
4							
4 A*							

* The A indicates a change in the organization of labor.

At the completion of the demonstration and post discussion, the student will be able to analyze a production function, when given in tabular form, and write:

1. A description of the functional relationship between inputs and outputs - the production function.

2. An explanation of the relationship.

3. A general statement of the relationship of specialized production to increased productivity through the:
   a. division of labor
   b. organization of labor
   c. use of capital goods

The teacher should prepare for the demonstration by dividing the class (assuming a class of 25-40) into two equal groups. Members of one group will perform production process A, the other B.

Equipment needed is:
1. Table space, or a series of desks placed in a row, upon which six stacks of paper can be placed flat to allow for easy collating.

2. Table or desk space, immediately adjacent to the collating area, at which three students can set and:
   a. straighten papers
   b. pin or staple
   c. underline captions with pen or pencil
   d. pile pinned or stapled sheets of paper in piles

The students must be able to pass the work easily to the next student.

3. Two boxes of pins and two sturdy, well operating, staplers, filled with staples.

4. At least 1,000 sheets of paper with some printing on them which can be underlined. Surplus ditto memos, etc., work very well. In order to use the sheets of paper several times, it is necessary for the students to unpin or unstaple the sheets after a production process has been completed.

The demonstration should begin with process A, and after the students have understood that, go on to process B.

Demonstration of Process A

1. Place tables on the chalk board:

Process A (pins)				Process B (staples)			
Number of workers	Production			Number of workers	Production		
	1st	2nd	ave.		1st	2nd	ave.
1				1			
2				2			
3				3			
3A				3A			
4				4			
4A				4A			
				5			

2. Set up two production lines in the following way. Place six piles of paper, in a row on table or desks and a box of pins at a work space immediately to the left of the row of paper. The purpose of having two production lines is to compute an average total output for each process. Individual differences in timing will be significant, perhaps large enough to hide the effects of specialization and diminishing returns. To save time, set up two production processes and run both groups together.

3. Show the students the process of collating six sheets of paper, straightening, pinning together and placing them in a neat pile.

4. Each demonstration should last for two minutes. One student should time the operation, one student should record the results on the table on the chalk board.

5. In order to avoid the effects of learning on the efficiency of the workers, if possible, no student should perform any one task twice.

6. The following tables show the recommended organization of production.

PROCESS A

Description of Production

Number of Workers	Description of Tasks
1	1 all operations
2	1 collates and straightens and underlines 1 pins and piles
3	1 collates 1 straightens 1 pins, underlines and piles
3 A	1 collates 1 straightens and underlines 1 pins and piles
4	1 collates 1 straightens 1 underlines 1 pins and piles
4 A	1 collates 1 straightens and underlines 2 pin and pile

PROCESS B

Workers	**Tasks**
1	all operations
2	1 collates 1 straightens, staples underlines and piles
3	2 collate and straighten 1 staples, underlines and piles
3 A	1 collates 1 straightens and places under stapler 1 staples, underlines, and piles
4	2 collate 1 straightens 1 staples, underlines, and piles
4 A	2 collate 1 straightens and places sheets under stapler 1 staples, underlines and piles
5	2 collate 2 straighten, underline and place under a stapler 1 staples and piles

The class has constructed two production tables which should show the following:

1. Increased production per man of labor (output/man) due to
   a. use of division of labor
   b. reorganization of labor
   c. use of capital goods

2. In the stapler production process decreased production per man at high levels of output due to diminishing returns with the addition of man 4 is less than the added output from the addition of man 3, (you should not get diminishing returns when using pins unless the work space represents a fixed capital item which places a constraint on output).

   It is important to confine this demonstration to 30-40 minutes so that at least the last 10 minutes of class can be devoted to completion of Frame 4, which summarizes the causes of the differences in productivity of the alternative production procedures demonstrated in class. Students should be assigned Frames 5, 6 for homework.

Day 4

1. Devote first 15 minutes of class to checking the homework assignment.

2. Complete frames 7 and 8.

3. Any unfinished worksheet frames should be assigned as homework.

Day 5

1. Complete Frame 9.

   Frame 9, on alternative cost should be completed during a discussion. Before the students fill in the first blank, the instructor might use the following sequence of review questions:

Look at Panel I

1. Who has an absolute advantage in producing arrows: B
2. Who has an absolute advantage in producing axes? A
3. What is the relative efficiency of A as compared to B.
   (a) for making arrows? .8
   (b) for making axes? 1.2
4. For maximum production, A makes the product for which he has the higher/lower relative efficiency.
5. Thus A makes.........? axes
6. B makes..............? arrows

LESSON NO. 3

EXCHANGE, MONEY, AND CREDIT

7 DAYS

Table of Contents and Specifications

Instructors' Materials

1. Content Outline
2. Long-Term Objectives
3. Interim Objectives
4. Summary Chart - Content and Objectives
5. Lesson Sequence Chart
6. Lesson Sequence

Equipment Needed

None

Student Materials

1. Worksheet

LESSON 3

CONTENT OUTLINE

ECON 12 Unit I

ISSUED FEB 1966

- I. Exchange
  - A. Need arises from existence of specialized production
  - B. Requirements of exchange
    - 1. Place of exchange - market
    - 2. Technique of exchange
      - a. barter
      - b. money
  - C. Barter - exchanging things for things
    - 1. Found in all pre-monetary societies
    - 2. Inefficient because:
      - a. matching buyer and seller difficult
      - b. time consuming
      - c. multiple prices for each item
      - d. accounting and recording of transactions extremely complex
  - D. Money exchange - solves problem of barter inefficiencies
- II. Money
  - A. Money is an entity which provides a commercial service. It increases the efficiency of exchange by making easier the matching of:
    - 1. buyer and seller
    - 2. borrower and lender
    - 3. saver and investor
  - B. In order to provide these commerical services money must perform certain functions and have certain qualities
    - 1. functions
      - a. medium of exchange - generally acceptable in all commercial transactions
      - b. unit of account (standard of value) accounts of all transactions kept in terms of it and thus it expresses the value of all assets
      - c. store of value - it can be held for use at any time and represents a store of purchasing power or a store of command over other assets
    - 2. Qualities
      - a. scarce - in order to function as a standard of value and a store of value, money must be kept scarce. This can be done in three ways. Money can be made of an entity which is scarce:
        - (1) naturally, like gold and silver
        - (2) because of the high cost of production, like wampum in an Indian economy
        - (3) because its creation is controlled by a political authority, like the control which the U.S. government exercises of the money supply

- b. Convenient
  - (1) durable - stand wear and tear of many transactions; and not deteriorate when stored
  - (2) easily portable and allow exchange to occur at any place
  - (3) easily stored
- c. In all countries with modern economics, an entity, to function as money, must be declared legal tender (i.e., it is legal to use it in commerical transactions).
- d. In order to maintain its value and to function effectively as a medium of exchange the supply of money must vary as the level of monetary transactions rises and falls.

C. The U.S. money supply
- 1. coins
- 2. currency
  - a. Federal Reserve Notes
  - b. Silver Certificates
  - c. United States Notes (greenbacks)
- 3. demand deposits in commercial banks, i.e., checking accounts upon which checks can be drawn

D. Money and its relationship to purchasing power.
- 1. In all monetized economies, the preservation of households and firms depends upon a regular flow of purchasing power - i.e., money with which to make purchases.
- 2. In the U.S. there are three legal ways to obtain the necessary flow of money into a household or firm.

  Households:
  - a. Income
    - (1) wages and salaries
    - (2) rent and interest
    - (3) profits
  - b. transfers of assets - any non-monetary asset, e.g., stocks, bonds, real estate, capital equipment, jewelry, art, can be sold for money
  - c. credit - households can borrow money for consumption

  Firms:
  - a. Income from profits
  - b. Wealth transfers
  - c. credit
    - (1) short-term loans for conducting usual business activities
    - (2) long-term loans for capital investment

III. Credit - money is scarce and it is distributed in such a way that some people have more than they want to use and other people have less than they want to use. Those who have less money than they want to use borrow money; Those who have more than they want to use lend it. A person's willingness to lend money is based upon three things:

1. the rate of interest which the borrower is willing to pay
2. the length of time until the loan will be repaid
3. the credit of the borrower, i.e., the reputation which the borrower has for fulfilling his financial obligations

The word credit refers to all of the ways in which people can borrow money. When a person has credit, he can borrow money. Thus, Credit provides a general, or specific command over money.

Credit is one of the things which has made possible the enormous expansion of the U.S. economy. It has performed three major functions:

1. it has provided business firms with money for the usual conduct of business
2. it has enabled business firms to invest in new productive capacity
3. it has enabled the individual households to increase their level of consumption and thus induce an expansion of production.

In order to understand the remaining part of this outline, the following definitions are necessary.

1. financial asset -
   a. currency or bank balances
   b. bonds - issued by business firms in return for the loan of money
   c. stock certificates - issued by business corporations in payment of money to the corporation. They represent a partial ownership of the corporation. The holder of the stock certificate is entitled to share in the profits of the corporation. (Most people hold wealth in the form of financial assets).
2. financial liability - when ever a loan is made, the evidence of the loan, bond, stock, etc. is an asset for the lender and a liability for the borrower. Thus money owed to a bank for a loan is a liability for the borrower and an asset for the bank. A bond is an asset to the bond holder and a liability to the corporation which issued it. Currency held by the individual is an asset to him and a liability of the U.S. Treasury. For every asset there is a liability of exactly the same value.
3. financial capital - same as financial asset, a synonym for wealth
4. financial investment - the purchase of financial assets or capital
5. real investment - the purchase of new capital goods, or the improvement of any factor of production, for the purpose of maintaining or increasing productive capacity.
6. saving - all investment is made from saving. Saving is that part of current income which is not spent on current consumption

7. real capital - any capital good, or any improvement in a factor or production. Real capital is the tock of wealth created by real investment.
8. liquidity - indicates the relative ease with which a financial asset, or a physical asset, can be exchanged for money. Money, which is completely liquid, is the standard by which liquidity is measured. The easier it is to exchange an asset for money, the more liquid it is. Liquidity depends on two factors:
   a. the time and trouble required to convert an asset into money
   b. the probability of converting an asset into money at its market value

A. 1. Consumption by individuals borrowing for present consumption. Interest is paid and principal of loan is repaid with anticipated future income
      a. loans from financial institutions
      b. installment buying
      c. use of credit cards
   2. Conducting usual business activities by firms, Interest and principal of loan are self-liquidating through business activity
      a. loans from financial institutions
      b. loans from other business firms
   3. Investment - creation of new productive capacity
      a. loans from financial institutions. Interest is paid and principal is repaid from anticipated future profits
      b. loans from the public through
         (1) sale of bonds, interest is paid and principal is repaid from anticipated future profits
         (2) sale of common stocks (certificates of ownership) to the public. In return for the money which the individual pays to the firm, the firm creates an asset which is held by the individual (stock certificate). This stock certificate entitles the individual to share in the profits of the firm.

B. Techniques of creating credit
   1. Consumer credit
      a. loans from financial institutions
         (1) banks
         (2) loan companies
         (3) credit unions
      b. installment buying
         (1) credit extended directly by retail merchant - installment payments made on outstanding balance
         (2) credit extended by financial institution which accepts conditional sales contract from retail merchant. Installment payments made according to terms of the contract
      c. credit cards
         (1) creates a fund of credit upon which the consumer can draw
         (2) crecit cards issued by
            (a) retail merchants

            - (b) national credit card companies
            - (c) banks
        - (3) payment of outstanding balance monthly, or payment of a monthly minimum required
- 2. Homeowner credit
    - a. mortgages (loans secured by real property)
        - (1) banks
        - (2) savings and loan associations, insurance companies
    - b. home improvement loans
        - (1) banks
        - (2) savings and loan associations
- 3. Business credit
    - a. short-term loans for conducting business affairs
        - (1) banks
        - (2) other business firms
    - b. long-term loans for capital investment
        - (1) loans from investment bankers
        - (2) sale of bonds to public
        - (3) sale of stocks to public

Frame 22 - Types of Loan, Requirements, & Interest Rates of Financial Institutions

Financial Institutions	Loans to Individuals								Loans to Business			
	Direct Money Loans		Goods & Services Installment		Credit Cards		Homeowners		Short-term		Long-term	
	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate
Commercial Banks	Steady job, good credit rating	12% -18			Good credit rating	0-18%	Home Ownership	6-12%	Good Credit rating of Management good profit record	5-8%		
Savings & Loan Assn.							Home Ownership	6-12%				
Credit Unions	Membership in Credit Union *	10-16%										
Investment Banks											Good Business record of management	5-7%
Insurance Companies	Life Policy owner limit 2/3 present value of policy	5-6%					Home Ownership	6-8%			Good Business record of management	5-7%

* Usually based on employment.

Frame 22 cont. - Types of Loan, Requirements, & Interest Rates of Financial Institutions

		Loans to Individuals						Loans to Business					
		Direct Money Loans		Goods & Services Installment		Credit Cards		Homeowners		Short-term		long-term	
		Require-ments	Nat. Rate	Require-ments	Nat. Rate	Require-ments	Nat. Rate	Require-ments	Nat. Rate	Require-ments	Nat. Rate	Require-ments	Nat. Rates
Finance Companies		Job, good employment record	18-32%										
Pawn Shops		Asset of approx. 3 times value of loan	25-35%										
Merchants				Customer with good credit rating	12-18%	Good Credit rating gains standard amt. of credit	18%						

IV. Difference between Money and Credit

1. Money performs three functions
   - a. medium of exchange
   - b. unit of account and standard of value
   - c. store of value
2. Credit is command over money. Which is either general or specific
   - a. general credit - represented ability to borrow money from banks and by national credit cards and Bankamericards. Can be used to obtain money directly or can be used as a general (1) medium of exchange, but it is (2) not a unit of account (the unit of account is the U.S. Dollar its fractions and multiples) and it is (3) not a store of value
   - b. specific credit - represents the ability to borrow money for specific purposes, e.g., loans to purchase specific items, or credit cards and charge accounts which can only be used in certain stores. It is (1) not a generally accepted medium of exchange, (2) not a unit of account, and (3) not a store of value

LONG-TERM OBJECTIVES

1. Define "exchange." (Answer to include words "trade" or "transfer" and the phrase or synonym for "of one asset for another.")

2. State why exchange takes place. (Answer to be to the effect: "to satisfy wants.")

3. Given alternatives, selects correct statement about why money is needed in our economy. (i.e., specialization requires efficient exchange, leading to development of money; money's efficiency as a medium of exchange spurred specialization, leading to demand for even more efficient forms of money).

4. Recalls the three functions of money. (i.e. unit of account, store of value, medium of exchange). Gives example of each

5. Given alternatives, recognizes the four qualities of efficient money. Identifies those of the qualities present in examples of primitive money.

6. Correctly pairs the words (1) income, (2) asset, (3) wealth, (4) purchasing power, with examples of each. List to include at least two non-examples.

7. Given a list of six assets, ranks them in order of liquidity. (Assets should be such that student can be expected to make the necessary distinctions).

8. From a list containing at least five financial institutions which extend credit and at least three others, identifies those which extend credit; states the types of credit extended by the selected institutions.

9. Given a list of at least ten examples of real and financial inventment and of real and financial investment, correctly identifies them.

10. Asked to name the form of credit which comes closest to fulfilling all of the functions of money, answers "credit cards." States which functions of money are and are not fulfilled by credit cards.

INTERIM OBJECTIVES

1. Define (a) barter (I)
   (b) asset (T)

2. Given description of a barter system which contains four goods and/or services and sufficient information about prices, constructs a matrix of exchange rates, quotes the exchange rate for given pairs of exchanges. (I)

3. Given alternatives, identifies the three functions of money. (I)

4. Defines liquidity. (I)

5. Given examples of forms of credit extended by various financial institutions, classifies them as (a) general or (b) specific credit. (T)

6. Given the three functions of money, identifies those fulfilled by credit cards. (T)

SUMMARY CHART Lesson 3 CONTENT AND OBJECTIVES

Concept	Essential Material (long-term)	Interim Objectives	Learning Experience Objectives	Rationale for Learning Experience
Exchange	Define exchange, state purpose of exchange.	Define barter, asset, calculate exchange rates	Induce generalizations about inefficiency of barter, the need for money exchange.	Understand that exchange grows from specialized production & that the need for efficiency in excchange leads from barter to money exchange.
Money	State need for money, recall 3 functions, recognize 4 qualities	Identify functions of money.	Induce 4 necessary qualities of money	That the functions of qualities of money arise from the needs of exchange
Purchasing Power	Recognize source of purchasing power: income, transfer of assets, credit		Class discussion to induce ways of obtaining purchasing power.	Understand the distinction between purchasing power and money - shows the need for credit.
Liquidity	Apply definition of liquidity	Defines liquidity	Rank a group of assets according to degree of liquidity	To understand one of the bases for distinguishing money from other types of assets.
Credit Need and Type		Classify examples as general or specific credit.	Induce functions of money performed by different instruments of credit.	Get students to see the practical need to understand financial institutions in this society
Sources of credit	Recognize institutions giving credit, recall credit facilities offered by institutions		List sources and purposes of credit, real essay on Investment Banks.	
			Read essay on Calculating interest rates	To develop a practical skill in calculating cost of credit.

Concept	Essential Material (long-term)	Interim Objectives	Learning Experiences Objectives	Rationale for Learning Experience
Investment and Capital	Recall distinction between financial & real capital investment: Recognize e.g.'s of financial and real capital.		Discussion to recall definition of real capital in lesson 1 and comparing with definition of financial capital given in this lesson. Worksheet frames to identify e.g.'s.	Necessary to understand the operation of financial institutions, and important to understand the special meaning of real capital and investment in national income analysis.
Credit vs. Money	Identify "credit card" as form of credit which is closest substitute for money; identify differences.	Identify functions of money performed by credit cards.	Read essay on "Cashless Society".	Relate discussion to students' lives.

LESSON NO. 3

EXCHANGE, MONEY, AND CREDIT

LESSON SEQUENCE CHART

CONTENT	TEACHER	VISUAL
Exchange: Reason for need Requirements Barter Money Exchange DAYS 1 AND 2	Introduce lesson Aid students in completing Frames 1-4.	
Money Functions Qualities DAYS 2, 3, AND 4	Aid students in completing Frames 5-8	
Purchasing power Income Wealth Assets and Liquidity Credit DAYS 4 AND 5	Review Frame 9, if necessary. Aid students in completing Frames 10-14	
Financial institutions Basic definitions Financial: asset, investment, liability and capital Real: investment and capital Creating credit DAY 6	Review Frame 15 Aid students in completing Frames 16-20	
True interest rate Functions of economic institutions Money and credit, today and in the future DAY 7	Review Frame 21 Aid students in completing Frames 22-23	

WORKSHEET	HOMEWORK	EVALUATION
Frame 1, reasons for exchange listed on chalk board Frame 2, how prices are expressed Frame 3, barter exchange Frame 4, inducing functions of money		Frame 3 Tests after lesson unit, and course
Frame 5, functions of money Frame 6, qualities of money Frame 8, review of qualities of money	Day 2, Frame 7, qualities of money Day 3, Frame 9, program on purchasing power	Tests after lesson unit, and course
Frame 10, income, assets, wealth, purchasing power Frame 11, assets and liquidity Frame 12, credit: needs and use Frames 13-14, credit: its basis	Day 5, Frame 15, credit institutions	Frames 11 and 14 Tests after lesson, unit, and course
Frame 16, basic definitions Frame 17, investment banks Frame 18, test of definitions Frame 19, creating credit Frame 20, review of money and credit	Day 6, Frame 21, true interest rate	Frame 18 Tests after lesson unit, and course
Frame 22, chart on financial institutions Frame 23, money and credit today and in the future		Frame 21 Tests after lesson unit, and course

The student should then be led to construct a matrix which shows the total number of prices for the five items, as follows. This should first be drawn on the chalk board and then copied onto their worksheets by the students.

	Robes	Mats	Canoes	Hides	Pots	
Robes		X	X	X	X	
Mats	X		X	X	X	
Canoes	X	X		X	X	
Hides	X	X	X		X	
Pots	X	X	X	X		
No. of prices:	4	4	4	4	4	**Total** 20

Day 2

1. Worksheet, Frame 4 - conduct classroom discussion which will enable class to answer the four questions as follows:
   a. Question No. 1 - "3"
   b. Question No. 2 - a statement equivalent to "he would have to trade his tobacco for robes, a canoe, or buffalo hides which he would store until cooking pots were available."
   c. Question No. 3 - equivalent to "with danger of less through spoilage, deterioration, theft, fire, flood, riot, local insurrection, or war."
   d. Question No. 4 - "by choosing one item that will:
      1. Reduce the number of prices to five - a standard of value and unit of account.
      2. Allow transactions between any two people - a medium of exchange.
      3. Enable a person to store wealth easily - a store of value.

2. Read Frame 5 on "Functions of Money; students should answer questions immediately after reading essay; answers to be reviewed in class discussion.
   Question 1: The coins and currency of our economy fulfil all three functions of money. Students might like to consider whether our money is becoming less efficient as the purchasing power of the

dollar declines -- an article bought for $20 fifty years ago might well cost 10 times as much now. Contrast with the inflationary period in Germany during the 1920-30's when a family's weekly food bill might call for a wheelbarrow load of currency.
Question 2: Stone money was definitely a store of value. In some degree it was a medium of exchange, although its weight made it an inefficient money for exchange. The variations in size and the arbitrary value accorded to a particular stone because of the difficulty of manufacture rule it out as a unit of account.
Question 3: Beaver skins fulfilled all three of the functions of money. As a medium of exchange they were completely adequate. As a unit of account they were less satisfactory since they could vary in size and quality. As a store of value, they sufficed, but they could deteriorate with time and they were also bulky for storage.

3. Answer questions for Frame 6 in class discussion.

Question 1, expected answers:
Because people are willing to accept our coins and currency in payment for things.

Because the government and/or law says they are valuable.
Because they are backed by gold and/or silver. Students should write answers to question 1 in the worksheet with a note, "To be reviewed later." If the instructor wants a record and has room, he can put the answers on the chalk board.
Question 2, expected answer: Gold and silver
Question 3, the only thing you could buy would be $20 currency.
Question 4, anything costing $20 or less
Return to answers to question 1 and cross out wrong answers.
Question 5, by government control. (Accomplished largely through control of reserve requirement and interest rates by actions of the Federal Reserve Board).

4. Homework assignment, Frame 7.

Expected answers: 1 through 5, No.

Question 6: Qualities implied in earlier answers are
- (a) scarce, but regulated so as to be adequate for needs.
- (b) portable, convenient, probably available in several denominations.
- (c) standardized
- (d) durable

Day 3

1. Review Frame 7 answers as above; summarize qualities of money in Frame 8:
   - (a) scarce
   - (b) convenient (portable, durable, easily stored).
   - (c) standardized (in units that make for easy accounting)
   - (d) controlled supply

Discussion if needed: (a) To function as a standard of value, money must be kept scarce. This can be done in three ways: (1) naturally, as with gold and silver; (2) high cost of production, as with wampum in an Indian economy; (3) control by political authority, as in the U.S. economy.

(b) If it is to be convenient, money must be (1) durable to withstand the wear and tear of many transactions and not deteriorate when stroed; (2) easily portable to allow exchange to occur at any place; (3) easily stored.

(c) To function as money in a modern economy, an entity must be declared legal tender (i.e., it is legal to use it in commercial transactions), it is highly desirable that its form be standardized so as to be easily recognizable, and its units should be legally set for ease in accounting).

(d) To maintain its value and to function effectively as a medium of exchange, the supply of money must vary as the level of monetary transactions rises and falls.

2. Elicit in class discussion and write on chalk board the various forms of the U.S. money supply:
   (a) coins
   (b) currency
   (c) demand deposits in commercial banks (i.e., checking accounts)

   Item (c) may not be immediately obvious to students. However, the checking account, based on money, as it is, has the functions and qualities of money. Its limitations are that checks are not always acceptable.

   Credit cards may be suggested as a further form of money. They certainly fulfil most of the uses of money and may even be acceptable in situations where a personal check is not. But -- important point -- credit cards are, as their name suggests, a form of credit. They usually do not involve direct and immediate exchange of money.

3. Homework assignment, Frame 9, the program on "Purchasing Power."

Day 4

1. Frame 10: Students should first write their own versions of definitions. In class discussion, correct and amplify as necessary. These definitions are contained in the Frame 9 program; if necessary, examples in the program can be reviewed.

2. Frame 11: Students read "Assets and Liquidity" and answer the questions;
   (a) 3 apartment house
       1 $10 bill
       2 herd of beef cattle
       4 S.F. Giants
       5 liner Queen Mary
   (b) Money itself
   (c) The baseball team and the liner. If the present owners of either wanted to dispose of them, they would probably find it difficult to (1) place a value on the asset, (2) find a customer.

3. Frame 12: Conduct discussion and write on chalk board the statements elicited. Discussion should end with students writing in answers to the effect that:
   (1) Since money is scarce, those with less purchasing power than they need must borrow from those with more money than they have use for at the current time. Credit is one way in which we gain command over money.
   (2a) Business uses credit to:
   provide money for the usual conduct of business (e.g., loans to pay weekly wages while waiting for end of month accounts to be settled, or to make bulk purchases at favorable rates)
   invest in new productive capacity (e.g., loans to buy machinery expected to pay for itself through increased production).
   (2b) Individuals use credit to enable households to satisfy wants, increasing their level of consumption and thus requiring expanded production.

Day 5

1. Students read Frame 13. Class might then discuss:
   (a) What is the overall effect of using credit?
   (b) Why are primitive interest rates for credit typically so much higher than those in our own economy?

   Points to be made:
   (a) Credit originally helped give a more even distribution of goods and services, particularly of those which were in seasonal supply or which involved specialization in production. In modern society, credit permits expansion of the economy by providing purchasing power based on future capabilities rather than on present capabilities. Credit has been the great moving force in the growth of both industrial and governmental activities of the last 150 years.
   (b) The terms of credit are necessarily based on the degree of confidence of the lender that his money will be repaid. In modern society, a lender's appraisal of a borrower's character, ability, and current wealth has the further backing of legal remedies that allow him to enforce repayment of a debt. Enforcement is relatively easy nowadays as compared with enforcement in primitive societies. Thus a modern lender runs a lesser risk and this is reflected in the interest rate.

   The granting of credit is a major business in our society, subject to competition like most other business, with the greatest amount of business going to the company that offers the best bargain.

   As a stimulant to discussion, teacher might offer the following quotation and then ask how this policy might be expected to affect the interest rate. Would the interest rate be favorable to the borrower?
   "If a man owe a debt and Adad (the god of storm) inundate his field and carry away the produce, or, through lack of water,

grain has not grown in the field, in the year he shall not make any return of grain to the creditor, he shall alter his contract-tablet and he shall not pay the interest for that year." -- The Code of Hammurabi King of Babylon, c.2100 B.C.

The effect would be to increase the interest rate. At first glance this seems to be a humanitarian law, aimed at protecting the rights of the borrower. In fact, the situation is more likely to be this: Whenever credit is extended, an element of risk is involved. The fewer the risks, the more reasonable it is to expect the lender to offer a low interest rate. In the case above, the lender has to take on the risks that he will receive no interest payment in the event of storm or drought. In the Mediterranean where the Babylonians traded, these could be very real risks and interest rates were correspondingly high. If the purpose of Hammurabi had been humanitarian, and his intention was cheap credit for the poor man, his ends would have been better served perhaps if he had instituted some kind of social welfare legislation for borrowers beset by natural disasters.

2. Frame 14:
The basis of credit is confidence.
The amount and cost of credit depends upon the degree of confidence the lender has in (a) the character, business ability, and financial status of the borrower, and (b) the possibility of legally enforcing repayment of the debt.
Note: A hundred years ago, a British statesman (Benjamin Disraeli) had something to say about the reputation of a borrower: "However gradual may be the growth of confidence, that of credit requires still more time to arrive at maturity." Nowadays, the building of a good credit reference is not too difficult, but the principle remains the same: A bad credit risk finds it hard to borrow money on reasonable terms.

3. Homework assignment: Frame 15.
(This is a preliminary gathering of data for use in Frame 22).

Day 6

1. Conduct discussion of Frame 15 assignment and complete frame with at least the following:

Institution	Serves	Purpose for which it provides credit
Commercial bank	I & B	Business loans, short-term Personal loans Mortgage loans
Savings & Loan Assn.	I	Mortgage loans

(Continued)

Institution	Serves	Purpose for which it provides credit
Credit Unions	I	Personal Loans
Investment Bank	I	Business Loans, large and long-term
Insurance Company	I & B	Long-term Business Loans Morgage Loans
Finance Company	I	Personal Loans
Pawn Shop	I	Short-term Personal Loans
Merchant	I & B	Specific Business Credit Specific Personal Credit

2. Frame 16: Students should read the definitions; they should complete the definition of Capital for themselves (preferably by referring back and finding the definition in context on the Lesson 1 worksheet if they cannot recall it).
   Review the distinctions between the two groups of definitions, i.e., the differences between financial and real capital and investment. This exercise is in preparation for the brief discussion of the money and capital markets mentioned in the next frame. It is desirably that students retain the meaning of real investment and capital.

3. Frame 17: Students read essay on "Investment Banks." This assignment is an optional homework or classroom assignment. It is intended to be used simply as general information; it puts some terms in context for the student. Reading of this frame can come before or after Frame 18, at the discretion of the teacher.

4. Frame 18: To be answered by students without help.
   Expected Answers: (1) (a) true; (b) true; (c) false; (d) false; (e) true. Item (a) is true, but provides an "upside down" view of what is happening for most people. In fact, the deposit of savings in a bank fits completely the definition of credit. Item (e) describes the purchase of a capital asset. A college education is considered to be a factor of production. The cost of tuition is a real investment that can be expected to increase an individual's productive capacity.
   (2) True: Real investment is the purchase of new capital goods or improvement of existing factors of production for the purpose of maintaining or increasing productive capacity. Production is the transformation of resources into goods or services which satisfy wants. Thus real investment has as its end purpose the satisfaction of wants.

5. Frame 19: In class discussion, get students to supply the various techniques used to create credit. List them on the chalk board; have students write the final version on their worksheets.

Individual credit includes:
(a) Direct money loans from financial institutions
  - banks
  - loan (finance) companies
  - credit unions
(b) Installment buying of goods and services
  - credit extended by retail merchant
  - credit extended by financial institutions which have accepted conditional sales contracts ("bought paper") from retail merchant
(c) Credit cards
  - issued by banks
  - issued by national credit card companies which charge a fee for billing the credit card holder
  - issued by retail merchants
(d) Homeowners loans
  - mortgages on real property (secured by real property)
  - home improvement loans (security may be other than real property)

Business credit includes:
(a) Short-term credit for conducting business
  - banks
  - other business firms
(b) Long-term credit for capital investment
  - investment banks
  - sale of bonds to public (repayment over a period)
  - sale of stock to public (part ownership in exchange)

Day 6

1. Frame 20: Student should complete for himself from recall or from checking in context of Frame 5;
(a) medium of exchange
(b) unit of account/standard of value
(c) store of value
Items 2 - 4 are intended to show that no form of credit has all of the functions of money. However, credit cards come close, particularly the cards issued by banks and by national credit card organizations. A credit card issued by a department store can be used for a wide variety of purchases, but it is still an example of specific credit since it is of no use in another company's store.
Item 3
(a) General credit includes individual
(b) direct money loans, and
(c) credit cards from banks and national credit card companies. All others are specific.

Items 3 (b) and (c):
Item 5: Yes. A card which provides general credit represents, in a wide variety of exchanges, instant purchasing power. There is commonly a limit on the amount of credit the card provides at any one time but the amount is usually sufficient for all but major expenses. Not all business firms will accept a credit card as a method of payment, but most will more willingly take a credit card than they will a personal check.

2. Frame 21: For optional use as homework or class assignment. Solutions:
Problem (a): Total payments \$819.99 Cost = \$20 (nearest \$)

$$\text{True interest rate} = \frac{2 \times 12 \times 20 \times 100}{800 \times 10} = 6\%$$

Problem (c): Total payments \$1279.95 Cost \$80 (nearest \$)

$$\text{True interest rate} = \frac{2 \times 12 \times 80 \times 100}{1200 \times 16} = 10\%$$

Loan with highest true interest rate is Loan (c).
Loan with lowest true interest rate is Loan (a).
The loan with the lowest monthly payments has the highest true interest rate. But note that this relationship of payments and interest rate is not necessarily true -- these examples were selected simply to make the point that inspection does not yield information on true interest rate.

3. Frame 22: Complete chart as shown during class discussion. Frames 15 and 19 have been preparation for this task.

4. (On following page).

Types of Loan, Requirements, & Interest Rates of Financial Institutions

Financial Institutions	Loans to Individuals						Loans to Business					
	Direct Money Loans		Goods & Services Installment		Credit Cards		Homeowners		Short-term		Long-term	
	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate	Requirements	Nat. Rate
Commercial Banks	Steady job good credit	12 -18%			Good Credit Rating	0-18%	Home Ownership	6-12%	Good credit rating of management record	5-8%		
Savings & Loan Assn.							Home Ownership	6-12%				
Credit Unions	Membership in credit union (usually based on employment)	10-16%										
Investment Banks											Good Business record of management	5-7%
Insurance Companies	Life Policy owner, limit 2/3 present value of policy	5-6%					Home Ownership	6-8%			Good Bus. record of management	5-7%
Finance Companies	Job, good employment record	18-32%										
Pawn Shop	Asset of approx. 3 times value of loan	25 -35%										
Merchants			Customer with good credit rating	12-18%	Good Credit rating gains standard amt. of credit	18%						

5. Students read Frame 23, "A Cashless Society." Questions should be answered in class discussion.

Item (1): Answers might include

- Most big commercial banks now use computers to handle all of their accounting at centralized locations. As a result, a branch bank can get almost instantaneous information on the status of any account with any branch of the bank. A check drawn on a New York bank and passed in California is commonly cleared within 24 hours.
- Many companies have their own computers for accounting and all other bookkeeping functions; often, workers time cards are actually computer input cards and weekly wage checks are the printed output of the computer. This output information could readily be transmitted to another computer for immediate addition to an account. Use of computers is not confined to large companies. Many small companies and even individuals such as physicians use shared computer services to keep accounts and bill customers.

Item (2): The answers here are necessarily speculative. The following may help keep the discussion broad and factual:

- Teenage credit is currently established largely on the credit rating and willingness to accept responsibility of those legally committed for the debts of minors -- i.e., parents or guardians. Thus a teenager's credit is now under the control of parents. If a parent is opposed to use of temporary credit for any reason, presumably a teenager would have difficulty in opening, say, a charge account. The tendency is towards broader use of credit by society. As credit becomes more and more a part of everyday living, it seems likely that parents will become more receptive to its use by their children.

  It is estimated that already one out of five teenage girls and two out of five teenage boys have charge accounts.

  Teen spending is already big business. Disposable income of 15-19 year-olds is estimated at $13 billion for 1966, $20 billion by 1970. And they spend it almost as fast as they get it.

  Teenagers now own 9% of all new cars in the U.S., 20% of all cars sold; 7 million of them have driving licenses with, presumably, access to cars. 500,000 teenagers are stockholders.

  In 1966, for the first time, half of the U.S. population is under 25. Between 1961-66, the total U.S. population increased 8% but the 13-22 year-old group increased 33%. With so much of the population concentrated in this age bracket, it seems inevitalbe that they must receive increasing attention from business and that current attitudes and policies affecting credit must undergo some changes.

Contra Costa Dept. of Education
SW:mr 2/8/66 150c

Lesson Number 3

WORKSHEET ANSWERS

SUGGESTED OR POSSIBLE ANSWERS

Frame 1

1. Men must exchange the output of specialized production.
2. Men must have a means of making such exchanges.
3. There must be markets.
4. There must be money.
5. There must be prices.
6. There must be means of transporting surpluses.
7. There must be ways of storing production surpluses.
8. Some men accumulate wealth.

Frame 2

a. Answer to question: "The number of needs which would have to be given for a pair of shoes, or vice versa."
b. Question: "How would this be expressed?" Answer: For example, 100 needles = 1 pair of shoes.
c. Does this express the price of shoes? Does this express the price of needles? Answer: Yes. Yes
d. How would one usually express a price? Answer: for example, $1.00 per dozen, or $1.98 each.
e. How would you express the price of shoes if 100 needles = one pair of shoes? Answer: The price of shoes is 100 needles per pair.

Frame 3

Diagram and matrix pages 2 and 3 of Lesson Sequence

Frame 4

a. Question No. 1 - "3"
b. Question No. 2 - a statement equivalent to "he would have to trade his tobacco for robes, a canoe, or buffalo hides which he would store until cooking pots were available."
c. Question No. 3 - equivalent to "with danger of less through spoilage, deterioration, theft, fire, flood, riot, local insurrection, or war."
d. Question No. 4 - "by choosing one item that will:
   1. Reduce the number of prices to five - a standard of value and unit of account.
   2. Allow transactions between any two people - a medium of exchange.
   3. Enable a person to store wealth easily - a store of value.

Frame 5

Question No. 1, medium of exchange, unit of account, store of value.
Question No. 2, store of value, occasionally a medium of exchange, never a unit of account.
Question No. 3, medium of exchange, unit of account, store of value.

Frame 6

Question No. 1, expected answers:
Because people are willing to accept our coins and currency in payment for things.
Because the government and/or law says they are valuable.
Because they are backed by gold and/or silver. Students should write answers to question 1 in the worksheet with a note, "To be reviewed later." If the instructor wants a record and has room, he can put the answers on the chalk board.
Question No. 2, expected answer: Gold and silver
Question No. 3, the only thing you could buy would be $20 currency.
Question No. 4, anything costing $20 or less.
Return to answers to question 1 and cross out wrong answers.
Questions, by government control (accomplished largely through changes in reserve requirements and interest rates as ordered by the Federal Reserve Board).

Frame 7

Questions 1-5, No.
Question 6, (a) scarce - but regulated so as to be adequate for needs.
(b) convenient - portable, probably available in several demoninations, easily stored.
(c) standardized
(d) durable

Frame 8

Review Frame 7 answers as above; summarize qualities of money in Frame 8:

(a) scarce
(b) convenient (portable, durable, easily stored).
(c) standardized (in units that make for easy accounting).
(d) controlled supply

Frame 9 - PROGRAM

Frame 10

(a) Income:
Student version ....
Instructor's version: money received for some given period in return for providing productive resources.
(b) Asset
Student version ....
Instructor's version: anything which is owned, has value, and can be exchanged.
(c) Wealth
Student version ....
Instructor's version: a total stock of assets.
(d) Purchasing Power
Student version ....
Instructor's version: command over money

Frame 11

(a) The sequence depends upon the conditions at the time someone wishes to trade a particular asset for money: 4, 2, 1, 3, 5, 6 is a possible ranking.
(b) Money.
(c) San Francisco Giants and the Queen Mary.

Frame 12

Conduct discussion and write on chalk board the statement elicited. Discussion should end with students writing in answers to the effect that:

(1) Since money is scarce, those with less purchasing power than they need must borrow from those with more money than they have use for at the current time. Credit is one way in which we gain command over money.
(2a) Business uses credit to: Provide money for the usual conduct of business (e.g., loans to pay weekly wages while waiting for end of month accounts to be settled, or to make bulk purchases at favorable rates. Invest in new productive capacity (e.g., loans to buy machinery expected to pay for itself through increased production).
(2b) Individuals use credit to enable households to satisfy wants, increasing their level of consumption and thus requiring expanded production.

Frame 13 - Data Presentation

Frame 14 - Confidence

Frame 15

Institution	Serves	Purpose for which it provides credit
Commercial Bank	I & B	Business loans, short-term Personal loans Mortgage loans
Savings & Loan Assn.	I	Mortgage loans
Investment Bank	I	Business Loans, large and long-term
Credit Unions	I	Personal loans
Insurance Company	I & B	Long-term Business Loans Mortgage loans
Finance Company	I	Personal loans
Pawn Shop	I	Short-term Person loans
Merchant	I & B	Specific Business Credit Specific Personal Credit

Frame 16

Capital is:
a. all improvements of land -- roads, dams, canals, sea bouys, buildings, etc.
b. all improvements in the efficiency of labor which are the results of education or training.
c. all tools and machines.

Frame 17 - Data presentation

Frame 18

1. (a) true, (b) true, (c) false (d) false, (e) true
2. true

Frame 19

Individual credit

- Direct money loans from financial institutions
  - banks
  - loan (finance) companies
  - credit unions
- Installment buying of goods and services
  - credit extended by retail merchant
  - credit extended by financial institutions which have accepted conditional sales contracts ("bought paper") from retail merchant
- Credit cards
  - issued by banks
  - issued by national credit card companies which charge fee for billing the credit card holder
  - issued by retail merchants
- Homeowners loans
  - mortgages on real property (secured by real property)
  - home improvement loans (security may be other than real property)

Business Credit

- Short-term credit for conducting business
  - banks
  - other business firms
- Long-term credit for capital investment
  - investment banks
  - sale of bonds to public (repayment over a period)
  - sale of stock to public (part ownership in exchange)

Frame 20

Question 1,
  (a) a medium of exchange
  (b) unit of account and standard of value
  (c) store of value
Question 2 - strike out this question
Question 3,
  (a) of the specific forms of credit you listed in Frame 19, which are specific?
    By individuals:
    (1) installment buying of goods and services
    (2) credit cards issued by retail merchants
    (3) direct money loans for specific purposes, e.g. to pay a debt
    (4) mortgage loans for specific purposes, e.g., a home improvement loan
  By business: - Almost all business borrowing is for specific purposes, e.g., to pay for a particular consignment of goods, with a short-term loan, or to buy a particular item of capital equipment with a long-term loan.
  (b) store of value
  (c) store of value, a general medium of exchange
Question 4: Credit cards issued by banks
Question 5: Yes.

Frame 21 - PROGRAM

Frame 22 - Page 10 of Lesson Sequence

Frame 23

1. Daily cleaning of checks; immediate verification of bank balances or credit card reliability.

2. Very probably because of the possibility of instant verification of everyone's credit reliability.

LESSON NO. 4

ECONOMIC SYSTEMS

6 DAYS

Table of Contents and Specifications

Instructors' Materials

1. Content Outline
2. Long-term Behavioral Objectives
3. Interim Behavioral Objectives
4. Summary Chart - Content and Objectives
5. Lesson Sequence Chart
6. Lesson Sequence
7. Completed Student Worksheet
8. Filmstrip descriptive catalog
9. Filmstrip on Geography and Artifacts of Northwest Indians
10. Overhead transparencies of Exchange Diagrams for the Tsimshian Economy
11. Suggested reference on Northwest Indians: Philip Drucker, Indians of the Northwest Coast. (Garden City, N.J., Natural History Press, 1963). $1.95

Equipment Needed

1. Day 1, filmstrip viewer and screen
2. Day 6 or 7, overhead projector and screen, grease pencil

Student Materials

1. Readings on the Northwest Indians
2. Lesson 4 Worksheet

LESSON 4

CONTENT OUTLINE

ECON 12 UNIT I

7 DAYS

ISSUED FEB 1966

This lesson is a learning experience, partly inductive, designed to lead to the definition of "economic system." Two economies, one primitive and the other our own, are compared, and the comparison provides (1) a basis for defining an economic system -- and (2) a method for studying any economic system.

I. Universal Economic Attributes of Any Society
  A. The Five Basic Economic Activities
    1. An economic activity is an activity which economizes on the use of scarce resources to satisfy wants.
    2. There are five basic economic activities common to all societies, all of which have been studied in pervious lessons to varying degrees of intensity:
      a. Production is an economizing activity because resources are transfored into goods and services which are more satisfying than the original resources.
      b. Consumption is an economizing activity in the sense that people choose to consume the things which give them the most satisfaction.
      c. Exchange is economizing because the persons involved in the exchange trade one item for another item which they want more than the first item.
      d. Saving is economizing because the person doing the saving prefers reducing current consumption in order to increase future consumption over what he thinks his future income will be.
      e. Investment (real) is economizing because the use of more capital goods in production will enable the society to produce more output in the future. Current investment in capital goods will increase future production efficiency.
    3. Although all societies exhibit these types of activity, the forms vary between societies.
  B. The Four Basic Economic Decisions
    1. In order to carry out the economic activities listed above, any society must make four types of economic decisions:
      a. Someone or some group must decide what to produce to satisfy wants.
      b. Someone or some group must decide how this output should be produced.
        (1) when to produce
        (2) where production should take place

        (3) what resources should be used
        (4) what production process should be used
        (5) how to organize the production process
      c. Someone or some group must decide how much to produce
      This involves such questions as:
        (1) How much of each good and service to produce;
        (2) How much to produce in the aggregate, that is, how many resources to use to produce want satisfying goods and services.
      d Someone or some group must decide how the output is distributed.
    2 All of these decisions involve choices about how to allocate scarce resources.
    3. Although these four types of decisions are universal, the actual decisions vary between economies.
  C. Economic Institutions
    1. Every society has economic institutions -- sub-groups of people within the society which organize and carry out the basic economic activities.
    2. An important characteristic of these economic institutions is the decision making process which governs the economic activities carried on by the institution.
    3. Although all societies have economic institutions, the form of economic organization -- the nature of the economic institutions is different in each society. There are an infinite number of possible forms of economic organization.
  D. Social Forces which affect the organization and operation of economic institutions. The exact form of economic organization which exists in a society depends to a great extent on three social forces:
    1. tradition or customs
    2. command or the decisions of leaders
    3. market competition

II. Economic System Defined
  A. The terms economic system and economy are used to refer to the economic organization of a society. The economy or economic system of a society is the total group of economic institutions which carry on the basic economic activities, and the exchange relationships between these institutions.
  B. Economists refer to the economic organization of a society as a "system" because the economy can be thought of as a system of exchanges between the various economic institutions in the society.
    1. It is usually possible to construct a diagram of any society which shows the basic institutions and the network of important exchange relations between them.
    2. Such a diagram is a useful pedagogical tool to aid in explaining the economic organization of a society and the basic economic interdependencies between institutions.

III. Summary

A. We can study the economic system of a society by studying how the economic institutions make the four basic decisions about the five basic economic activities, and by studying the system of exchanges which make the institutions interdependent.

B. The job of explaining the existence of a particular economic system in a society will be taken up in Lesson 6. Here it is enough to recognize that one basis of explanation is the relative importance of the three social forces in economic life.

LONG-TERM BEHAVIORAL OBJECTIVES

1. Students can state in writing the four universal attributes of all economies, and the categories under each of the four attributes:
   a. the five basic economic activities
   b. the four types of allocation decisions
   c. the organization of economic activities by economic institutions
   d. the three social forces which control economic organization
2. Given alternatives, the student recognizes that the characteristic which all economic activities have in common is that they are economizing, that is, they all involve conserving scarce resources to satisfy wants.
3. Given alternatives, the student recognizes that the characteristic which all economic decisions have in common is that they all involve choices about how to allocate scarce resources to satisfy wants.
4. The student can define in writing economic institution as a group of people organized to carry on economic activity, and can give three examples of economic institutions in the U.S.
5. Given examples of economic institutions in the U.S., students will show how one or more of the three social forces -- tradition, command, and market competition -- affects the organization and decisions making behavior of the institution.
6. The student can define economic system in writing as the total group of economic institutions in a society and the exchange relations between them.
7. From alternatives, the student recognizes what is shown by the system of exchanges between institutions in an economy: the form of interdependence.
8. When asked how to study an economic system, student states:
   a. identify major economic institutions
   b. describe the decision making process of each institution
   c. describe the major forms of exchange between these institutions.
9. From alternatives, the student identifies two reasons why the market figures so largely in the economic life of the U.S.: We sell our services and we purchase most of the things which satisfy our wants in markets.

INTERMEDIATE OBJECTIVES

1. Given examples of human activities, the student will identify those which are economic, and will identify the economic activity involved.

2. Given examples of human decisions, the student identifies which are economic decisions and will identify which of the four types of economic decisions is involved.

3. Given examples of social institutions, identifies those which are institutions and states main type(s) of economic activity in which it engages.

4. When asked for the basic types of economic activities, lists and explains in one sentence why each is economizing. (See content outline, I).

5. Given alternative examples, the student can identify which represents saving in the Tsimshian society.

6. Given alternatives, identifies the reason that saving and investment are usually distinguishable for the Tsimshian, and are often different activities in the U.S.

7. Given a list of possible similarities and differences between Tsimshian and U.S., students correctly distinguish between items which represent similarities and items which represent differences.

8. From alternative examples, the student identifies the major differences between the Tsimshian and U.S. economies:
   a. economy composed of economically self sufficient extended family units:
   b. little market exchange and no generally accepted medium of exchange in Tsimshian economy:

9. The student can explain in writing how the exchange diagram of the Tsimshian summarizes the interdependence between the institutions shown in the diagram. Or from alternatives, identifies the major interdependencies between economic institutions in Tsimshian society (trading between villages and regions for scarce resources or goods; gift giving in potlatches between numayms to validate social structure and property rights).

Concept	Essential Material (long-term)	Interim & Experience Objectives	Learning Experience	Learning Device
There are Universal Characteristics of an Economy		Discover characteristics, analyze and compare 2 economies.	Student "discovery" of major generalization, & application to the study of 2 economies.	Readings describing Tsimshian social organization, class discussion, filmstrip
Economic Activity	1. 5 kinds: production, consumption, exchange, saving, investment 2. Each is economizing	1. Identify major forms of each for Tsimshian and U.S. economies. 2. Write explanation	To reinforce definition of economic activity	Worksheet Worksheet
Economic Institutions	3. Definition	3. Identify for Tsimshian and U.S. economies	To reinforce definition and apply concept	Worksheet
Economic Decisions	4. 4 kinds: what, how, for whom, how much	4. Give examples of each from Tsimshian and U.S. economies.		
	5. All are allocation decisions.	5. Why are they economic decisions?	Reinforce definition and apply concept	Worksheet
There are three social forces affecting economic organization	6. Types: tradition, command, market competition	6. Give examples of decisions affected by each for U.S. & Tsimshian economies; compare the two economies.	Same as above Application of generalization Prepare for lesson 6	 Worksheet
Economy or economic system	7. Definition	7. Difference between a set and a system; derive a definition in class discussion.	To show economic institutions are interdependent Students agree on & learn formal definition	Worksheet Worksheet
Exchange Diagram	8. Economic institutions are related through a system of exchanges.	8. Derive diagrams of major exchanges in Tsimshian economy.	Reinforce concept of system through a visual diagram; lay groundwork for the next lesson.	Worksheet
	9. 3 steps in studying economy.	9. Derive through class study of the two economies.		Transparancies worksheet & class project

In preparing for this lesson, keep in mind its primary objectives and the suggested strategy for achieving these objectives:

1. To discover that studying an economy involves studying five characteristics common to all economies:
    a. the five basic economizing activities
    b. the economic institutions which organize the basis activities
    c. the four basic types of allocation decisions made by these institutions
    d. the relative importance of tradition, command and market forces on the behavior of economic institutions
    e. the interdependence between economic institutions
2. To understand that an economy is an *economic system* of interdependent economic institutions related to each other by a network of exchanges.
3. To demonstrate the use of diagrams to summarize the important exchanges in an economic system.

Homework, night preceeding Day 1:

Complete worksheet Frame 1, read the introductory essay and excerpts from chapter 3 of Drucker on the Northwest Indians, and take notes as suggested in Frame 2.

The introductory essay describes the geography of the Northwest Coast of the U.S. and Canada and the linguistic basis for making distinctions between the different indian groups which inhabited this area. The excerpts from chapter 3 of Drucker describe the general social organization of all of these indian groups for the prehistoric period, the period before the early part of the 19th century and before the influence on indian culture of the white men. Chapter 6 describes one of the more wealthy groups of tribes, the Tsimshians, thirteen tribes which lived along with the Haida and Tlingit linguistic groups in the northern most part of the area.

The readings have been edited to provide authoritative data on indian life with a minimum analysis of the society. The purpose of the lesson is to allow students to use this data to arrive at their own analysis.

One further note on these readings is necessary. The Northwest Indian tribes are popular subjects in anthropological, sociological, and psychological literature, and the institution of the potlatch is the main source of this popularity. Unfortunately, most of the direct evidence on these societies is from the late 19th century after the influence of the whites had altered the basic structure of the aboriginal culture. This is particularly true of the potlatch which, because of depopulation and trade with the whites, became an occasion for orgies of competitive destruction.

Recent anthropological work has led to studies which have reconstructed the aboriginal culture and the essays in this lesson is based on this work. This account will differ markedly from the flamboyant accounts to be found in Ruth Benedicts' *Patterns of Culture*, and in *Cooperation and Competition*, edited by Margaret Mead.

Day 1

1. Explain the purpose of the lesson--to find a general procedure for studying the economy of a society by studying and comparing two quite dissimilar economies.

   Teacher: What is meant by the concept economy?

   Students reply until a satisfactory answer is given -- the way a country or group of people organize to use scarce resources to satisfy wants.

   Explain that the students are to work together to arrive at an acceptable procedure. Point out that a rather big hint, the first step of the analysis, is already provided in the want-satisfaction chart included in their readings. With this as a starting point, students must figure out the rest of the problem for themselves with the teacher acting as a guide, referee, coach (whatever role you decide you want to play). Explain to students whatever procedure you intend to follow.

2. Ask students to study the want-satisfaction chart included with the readings on the Northwest Indians. This chart summarizes the major components of the want-satisfaction chain for the Tsimshian Indians. It summarizes the major forms of economic activity, and therefore it is the first step in the study of the Tsimshian economy. Have students take enough time to read the chart, but do not discuss it except to make sure that students understand it.

3. Show the filmstrip and give a running commentary of the objects pictured in the filmstrip. A descriptive catalog of the filmstrip is included as item (9) of teachers materials. The purpose of the filmstrip is to illustrate the want-satisfaction table, and to provide a visual impression of the cultural development of the Northwest Indians.

4. Start a two day class activity designed to allow students to discover for themselves how to study an economy. This inductive learning experience should culminate in student discovery of the general form of economic organization and of a procedure which can be applied to the study of any economy. There are many possible ways to organize the activity. It occurs to us, for instance, that this lesson is a natural for small group work, with each group working together to solve the problem. In this procedure, the teacher would circulate between groups giving help and direction where needed. However you organize the activity, remember that your responsibility is to engage the students in the problem, and to try to keep them on a productive line of inquiry.

   Below is a suggested procedure which may not allow students enough freedom really to make discoveries for themselves, but it is a way to proceeed for the teacher who is not too sure of this own ability or willingness to organize student centered learning.

Ask two or three students for the lists they made for Frame 2, and write this information on the chalkboard, perhaps like this:

	List of Specific Things	List of General Things
Student 1		
Student 2		

Ask other students to make some sense out of this information, or to add to one or the other of the lists, if they think that other things should be included. In the remaining class time, ask students to suggest better ways to organize these suggestions.

Homework - Finish reading, complete Frame 2.

Day 2 and 3

1. Put lists from previous day back on the board. You are seeking enough information to get the three categories--basic economic activities, basic economic institutions, basic allocation decisions. If there are enough items on the board to get the three categories after the items are reorganized and consolidated, tell students that they have listed enough things to be able to state the basic features of the Tsimshian economy which should be studied.

2. Call for suggestions about how to organize this information so that economic activities, institutions, and decisions will become evident. By the end of the class period you should have agreed on these three categories of things to study, and you should have identified what some of the basic economic activities are. How you do this depends on how students work out the problem. They may come up with the three general categories a time; and then go back to figure out the subcategories. Or they may investigate one category at first, e.g., they may discuss the different kinds of economic activity which would then lead to the generalization that there are five basic types of economic activities.

   A. A suggested way to get general agreement on the existence of five basic economic activities:
   Suppose that students state that we must study production, consumption and distribution.
      Teacher: Why?
      Answer: they are all economizing activities which help to overcome scarcity.
      Teacher: Are there any others besides production, consumption and distribution (or exchange)? If you get no response, ask students to look at want-satisfaction chart again to see if there might be some other activity shown there which economizes on scarce resources.
      Teacher: If students still do not suggest investment or savings, ask them about production of tools, canoes, houses? What are they?

Answer: Capital goods
Teacher: How do you get capital goods?
Answer: Through saving and investment.
Teacher: Does both saving and investment occur in Tsimshian economy?

Get students to give examples which they think represent one or the other or both. For instance, what is the production of candlefish oil or smoked salmon? It is investment in stocks of stored food to be used in the winter or traded for other goods. (This, by the way is a category of investment which you may not have stressed in lesson 3, and it should be brought out here that investment goods are either plant and equipment or stocks of goods to be used at a later time, i.e., inventories of various kinds). It is also saving. The indians used their labor to produce goods which are not for immediate consumption. The case of the Tsimshian chief hiring a canoe builder to build a new canoe, is an example of investment closer to what happens in the U.S. Here, saving and investment are different acts. This candlefish oil represents savings and investment from a past period. The chief pays for the investment with candlefish oil.

Teacher: Why there is trouble making a distinction between saving and investment for the Tsimshian?
Answer: Because there is no money. Often the people who want to invest do so directly by the use of labor to produce the investment good. The local clan group pays for its new house by using its labor to produce the capital good instead of consumption goods.

b. A suggested way to get agreement on the existence of basic institutions which organize the economic activities.

Student states:You have to study the local clan group
Teacher: Why?
Student: Because they do most of the economic activities.
Teacher: Correct. Define economic institution.

Or, if students don't recognize that yuu have to study the local clan group -- Teacher: Remind students that they had defined an economy as the way a society organizes to allocate resources, etc. How do the Tsimshian organize? Then proceed with the line of questioning suggested above.

c. A suggested way to get agreement that you have to study allocation decisions.

Assume that students have already decided that you must study economic institutions.

Teacher: What do you study about these economic institutions?
Answer: Don't give up until someone says that the institution has to decide things about production, consumption, etc., before the activities can be carried.

Teacher: What should we study about this?
Answer: (1) who makes decisions, (2) the kinds of decisions which have to be made.
Teacher: What kinds of decisions do they have to make?
Answer: Make sure students list all four types.
Teacher: What do all these decisions have in common? What kind of decisions are they?
Answer: They are all allocation decisions, they represent choices about scarce resources.

3. Ask students to use the remainder of the period working on Frame 3. Before students start working on their own, complete what should be included in column 1 of the chart used in Frame 3. You may wish to have more explicit listings under each category than shown in the sample worksheet. (See item 7 of Teachers' Materials).

Homework for night 2: Start work on Frame 3. By the end of the second day in class you should try to have completed enough analysis so that students can start the comparative study of the Tsimshian and U.S. economies. For instance, if students have decided on three of the basic economic activities, then fill in those items in column 1; for homework have student describe these activities in the two economies in the table in Frame 3.

Homework for night 3: Complete Frame 3.

Day 4

1. Spend the period going over Frame 3 in detail, using student answers and student criticisms of students' answers to write an acceptable and complete answer to the Frame on the board. Students should correct and complete their own answers on their worksheets. For students who are slow in copying answers, perhaps because they forgot to do their homework, tell them to do as well as they can in class and to finish the chart for homework, on pain of death!

   Use the sample provided in the completed teacher's guide worksheet to make sure that the table you formulate in class is at least as good as the one in the guide.

Homework: Students who were not able to get a completed copy of Frame 3 in class should complete it for homework. Complete Frame 4, a summary list of differences between the Tsimshian and U.S. economies.

Day 5

1. Discuss and answer Frame 4 using the teacher's guide as a model. Write an acceptable answer on the chalkboard and make sure students correct and complete the frame on their worksheets: A procedure is suggested here:
   A. Ask a student to give his list of main differences, (the first on his worksheet). Keep asking for additions until you have covered most differences between the two economies.

B. Ask students to analyze this list and come up with the basic features of the Tsimshian economy which differentiate it from ours. List items until the list is complete.

2. Discuss or lecture on the three social forces which determine the form of economic organization. Point out that the class has discovered a major difference in economic organization between the two economies. In our economy, most economic decisions and activity are made in response to market forces. In the Tsimshian economy, most decisions and activity are based on tradition or customs.

There are three social forces which determine economic organization: tradition, command, and market competition. Define each.

Economists differentiate between economies according to the relative importance of these three social forces. The Tsimshian is a traditional economy, the U.S. is a market economy.

3. The class as a group completes Frame 5. This frame gives students practice giving examples of Tsimshian economic behavior influenced by one or another of the three social forces.

Homework: Complete Frame 5 if it was not completed during class. Complete Frames 6-10. These are review frames to give students practice using the concepts developed in this lesson.

Day 6 and perhaps 7

1. Lead a class discussion to arrive at a complete and acceptable definition of the concept of an economy.

A. Conduct a question-answer session aimed at developing a definition of an economy as an economic system:

Teacher: What is the definition of an economy?
Teacher: The term economic system is a synonym for economy.
Why?
Answer: It implies that an economy is a system.
Teacher: What does the word "system" mean?
Answer: A group of related things which form a whole, which in some sense is more than just the sum of its parts.
Teacher: What's an economy a system of?
Answer: Of economic institutions
Teacher: Why is this group of institutions we call an economy a system?
Answer: Because the economic institutions are systematically related to each other. They are mutually dependent.
Teacher: How?
Answer: Through exchange (and cooperation).

Teacher: What are some examples of major exchanges?
Answer: Barter of candlefish oil, hiring skilled workers, potlatches

B. Ask students to complete Frame 11 which summarizes what they have just discussed.

C. After students have completed Frame 11, ask one student to give his definition of the concept of an economy. Ask for criticism, additions, improvements in working. When you have a definition which the class thinks is complete, and clear, ask students to write it in the space provided in Frame 11.

2. Lead a class discussion and demonstration to complete Frame 12 and 13. This is the culminating activity of the lesson summarizing the exchange system of the Tsimshian Indians. This is a very important part of the lesson. It demonstrates the use of exchange diagrams and it lays the groundwork for lesson 5 on the circular flow exchange diagram for the U.S.

A. Point out that there is one part of the analysis of the Tsimshian economy which has not been done. The class has not described the system of exchanges between the basic economic institutions in the Tsimshian economy. The exchanges will be described by a series of diagrams.

B. Complete Frame 12 as an all-class activity. This frame may not be necessary. It is included to make sure students understand the basic social structure of the Tsimshian. Using the table provided in the teacher's guide, as students supply answers, write the answer to Frame 12 on the chalkboard and ask students to copy the answer. If Frame 12 is not completed by the end of the hour, complete column 1 of the table and ask students to complete column 2 for homework.

C. Complete Frame 13 in class. Ask students for the main forms of exchange in Tsimshian life: barter and potlatches.

D. Barter exchange diagrams: Ask students for the main types of barter described in the reading. There are two: barter of candlefish oil for other goods, and barter of goods for skilled labor. Draw diagrams, using student suggestions, or show transparency and have students copy the diagrams in their worksheet. Answer questions and then go on to potlatch exchanges.

E. Potlatch exchange diagrams: (1) General potlatch validating a title: Draw the two boxes representing one clan and all other clans and ask students to put in exchange arrows and label them. Show transparency and ask students to copy this in the worksheet. Point out that in this case the exchange is not an immediate trade, but takes place during two different potlatches which are separated in time.

(2) Marriage potlatch: Here there is an immediate trade of a woman for goods. Have students draw the diagram, show the transparancy and have students copy it.

(3) Funeral: Here again there is an immediate trade of goods for funeral services. Show transparancy and ask students to copy on their worksheet.

F. Tell students that you get a better understanding of inter-clan exchange by drawing a diagram showing the succession of exchanges between one clan and all others during the life of the clan group's chief. Show transparency, explain it and ask students to copy it on their worksheet. Then ask students to supply the arrows which describe the exchanges which take place at each phase of his life. Ask students to complete the diagram on their worksheets.

LESSON NO. 4

ECONOMIC SYSTEMS

LESSON SEQUENCE CHART

CONTENT	TEACHER	VISUAL
How to study an economy: Study the universal features of any economy: 1. Five economic activities 2. Economic institutions 3. Four allocation decisions DAYS 1 AND 2	Introduces lesson very briefly and shows and provides running comments on the slide show Organizes a student centered class discussion. The object of which is to get students to figure out how to study the Tsimshian economy.	Show slide show, showing the major manufactured outputs of the Northwest Indians
Application of this procedure to an analysis of the Tsimshian and U.S. economies DAYS 3 AND 4	Day 3 Teacher completes discussion and helps students to complete column I of the analysis chart in Frame 3 Day 4, develops a satisfactory answer to Frame 3 on chalkboard from student responses	Write a complete and acceptable answer to Frame 3 on chalkboard
Comparison of the two economies: Economies can be differentiated according to the relative importance of tradition, command, and the market DAY 5	Class discussion of Frame 4 Point out that there are three social forces which affect economic organization. Do frame 5 in class	Write correct answer to Frame 4 on chalkboard
An Economy as an economic system: Diagrams of the major exchanges in Tsimshian Economy: Summary of social reorganization Diagrams of major exchanges in Tsimshian Economy DAY 6 AND 7	Teacher leads a class discussion to investigate why an "economy" is often referred to as an economic system. After students complete Frame 11 individually, asks students to give an acceptable definition of the concept, economy. Teacher tells class that the economic system can be described by diagramming major exchanges. Asks students to review social organization of Tsimshian by completing Frame 12 as a cooperative class exercise. Develops diagrams on blackboard or using overhead projector. Has students do as much as possible, particularly on diagram of Chief's life cycle.	Completes Frame 12 on chalkboard Overhead projector transparencies of diagrams

WORKSHEET	HOMEWORK	EVALUATION
Introduces purpose of lesson. Frame 1-reviews important conclusions from lesson 1,2,3. Frame 2-provides space to write first impressions what things should be included in a study of the Tsimshian economy.	The night before the first day in class read the general essay and excerpts from chapter 3 of Drucker on Northwest Indians. Complete worksheet frames 1 & 2 Next night complete readings	Frame 3-Students apply the procedures developed in class to describe the Tsimshian & U.S. economies
Frame 3 - is a comparative description of Tsimshian and U.S. economies	Work on Frame 3	
Frame 3 - Students supply their answers in class and correct their analysis on their own worksheet	Complete Frame 3 Worksheet, Frame 4	Teacher asks student to recite their answers to Frame 3
Frame 4 - Summary comparison of the major differences in the two economies Frame 5 - gives examples	Frames 6 - 10	Frames 6-10 test student comprehension of material learned in the first 5 days of the lesson
Frame 11 - summarizes the class discussion of economic system. Students write their own definition of economic system and copy definition developed by the class.		Frame 11 provides test frames on the meaning of system and of economic system
Frame 12 - summary chart of organization of major social groups in Tsimshian society	Complete Frame 12	
Complete Frame 13 in class - draw diagrams on worksheet	Frame 13, part C & D on importance of these diagrams	End of lesson test End of Unit test End of course test

Economics is the study of how people organize to use scarce resources to satisfy their wants. This organization is called the Economy of that society. Economics is really the study of economics.

The purpose of this lesson is to help you figure out a general way of studying the economy of a country or society. We will do this by studying the economy of a fairly simple society of people (the Tsimshian Indians of the early 19th century); then by trying the same procedure to summarize what we know about the U.S. economy; and finally by analyzing the similarities and differences between the two economies to come up with a general procedure for studying the economy of any society or country.

FRAME 1

REVIEW FRAME

The previous lessons provide important clues to what is meant by the economy of a country, and how to study a country's economy. A brief review of major conclusions of each of these lessons is important.

Conclusions from Lesson 1 - The central problem in economics is the existence of scarcity which is defined as an inequality between resources and wants, less resources than necessary to satisfy wants. The general way people have tried to cope with this problem was summarized in the want-satisfaction chain. Five types of solutions to the problem are: (1) increase productivity of inputs; (2) produce more satisfying things; (3) increase amount of inputs; (4) redistribute output; (5) reduce wants.

Conclusions from Lesson 2 - Greater production efficiency has been achieved by men through three types of production specialization:
(1) factor specialization
(2) division of labor
(3) use of capital goods

Conclusions from Lesson 3 - In an industrialized society people become more and more dependent on each other because in order to satisfy their wants people must exchange their productive services for money which they then use to buy want satisfying foods and services. A person's ability to satisfy his wants depends on his purchasing power (his command over money). The necessity to engage in exchange is a necessary consequence of production specialization.

FRAME 2

NOTES ON THE TSIMSHIAN ECONOMY

Please read the essays on the Northwest Indians which your instructor has distributed. As you read the essays, write down in the space below a list of those parts of Tsimshian life which you think are part of Tsimshian economic life and of the Tsimshian economy. For each item you write down try to state briefly why you think it involves economics. (Don't forget to study the want-satisfaction table at the end of the readings). Before you come to class tomorrow try to summarize your thoughts by listing the general types of things you think you would describe in a study of the Tsimshian economy.

Space for your specific list of things which represent Tsimshian economic life or the Tsimshian economy.

Space for your list of general things to study about the Tsimshian economy.

FRAME 3 THE BASIC FEATURES OF TWO ECONOMIES

Follow instructions given by your teacher in completing the summary description of the U.S. and Tsimshian economies.

Summary Table Describing the Basic Features of the Early 19th Century Tsimshian Indian Economy and the Modern U.S. Economy

I Basic Features of an Economy	II Description of These Features in the Tsimshian Indian Economy	III Description in the Modern U.S. Economy

Answer to Frame 3

5 Basic Activities

1. Production	1. Major forms of production: fishing, sea and land hunting, woodworking, sea and land food gathering, weaving, food preserving	1. U.S. production is much broader including all forms of mining, agriculture, manufacture of consumers' and producers' goods, personal services, financial, transportation, distribution services.
	2. Some occupational specialization (skilled woodworking), some division of labor in housemaking, extensive use of capital in fishing.	2. High degree of specialization of all forms: Mechanization, automation, high degree of specialization of labor.
2. Consumption	1. For Indians, the Tsimshian lived well. Consumption patterns were fixed by custom and status, and by industriousness of the father. Generally nuclear families provided for themselves; however, the group's chief was responsible for well-being of entire group. People wore dress and ornaments which showed their social status.	1. Families are free to choose within limits set by income. Family income is determined by the value of productive services provided by the family.
3. Exchange	1. Traded necessities, for finished goods and luxuries.	1. All persons work for money.
	2. Hired skilled craftsmen, mainly for woodworking, canoe-building, and house-building.	2. All goods and services bought with money.
	3. Gift exchanges of various forms of wealth, food at feasts; food, blankets, candlefish oil, coppers at potlatches	3. Interregional and international trade.
	4. No money as such	4. Most exchanges are money exchanges, and it is almost impossible for a family to survive without money purchasing power.

Answer to Frame 3 cont.

4. Saving	1. The major saving was in the form of food storage, and production of exchangeable goods. Tsimshian produced candlefish oil for trade. Their saved labor was in the form of this oil. See "investment" for the rest of the answer.	1. Both firms and families save income and "invest" this income in different ways. Families usually put savings in savings accounts, Gov't. bonds, corporate stocks, sometimes in real estate. Business firms usually use their savings for their own expansion.
5. Investment	1. The major investment was in canoes, houses and stocks of food and candlefish oil produced in season and stored for the groups' winter consumption, for trade, or to pay for construction of canoes or for other woodworking skills. Saving and investment are really indistinguishable in most cases.	1. Families purchase new residential housing. 2. Most investment is by business firms, who purchase new capital goods (plant and equipment) and accumulate stocks of inventory of raw materials, semi-finished and manufactured goods. 3. Gov't. pays for public investment in highways, bridges, schools, public buildings, defense.
Common Characteristics Economic Institutions	1. The clan local group was the basic institution. It carried out most economic activities autonomously of other local groups. It engaged in production, consumption, exchange, (both trade and potlatches), saving, investment independently of other local groups. It was more or less sufficient except for exchanges via trade and potlatching with other groups and village cooperation in war. All property was jointly owned by local clan group and administered by the chief.	1. Family is primary consumption institution. 2. Private firm (mainly the corporation) is main production unit. 3. Because of specialization and money exchange, there are also special institutions for transportation, retail and wholesale trade -- and finance and commerce services. 4. Gov't. agencies are sometimes economic institutions TVA, Post office, Gov't. regulating agencies, such as Federal Power Commission, Welfare agencies, and schools.

Frame 3 cont.

Basic Economic Decisions:		
1. What to produce	1. Determined primarily by custom. Each male nuclear family head is free to work by himself for some projects. Any work requiring investment was ordered by the chief -- or house, or canoe construction, preparation for feast or potlatch -- but even here, for major projects, traditional procedures were followed.	1. Determined by producers, but since producers are in business to make profit, and since businesses compete with each other for consumer's business, they are forced by competition to produce goods and services most in demand by consumers. Goods in demand are those with high prices and profit margins. Market competition determines business behavior.
2. How to produce	1. The time of year for production was determined by custom and natural seasonal changes, e.g., salmon run. 2. Production techniques were determined by customs and secrets of the local group. 3. Use of land was determined by custom. Each local group had well-defined property rights -- berry patches, salmon run sites, mollusk beds., etc.	1. Determined by business management, usually determined to maximize profit. Try to cut costs by efficient production methods, and factors of production. If the price of 1 or 2 substitute inputs falls, it will be used instead of the other input.
3. For whom to produce	1. Determined by custom. The chief of each group was responsible for his group, but each family provided fish and food for itself with the stipulation that half of the production went to the chief for the general use of the local group. 2. Clothing and body ornamentation was set by custom; dress depended on one's social status. 3. Some local groups were richer than others, so their members were more prosperous. 4. Within the local group, personal wealth depended mainly on social status and partially on industriouness.	1. Determined by the individual's ability and willingness to provide productive services, i.e., on his income. 2. Given their income, people can buy whatever they want. People's tastes affected by custom, advertising, social pressure. 3. For people who do not provide productive services, gov't. transfers tax money from income earners to people on relief or other forms of welfare. 4. Income is distributed unevenly, generally in accordance with a person's control of property and labor skills.

4. How much to produce	1. Determined by custom, weather and other such circumstances. Tsimshian worked only part of the year and devoted winter months to ceremonial activity.	1. Affected by aggregate demand and supply -- the total willingness of all consumers and producers, to buy and sell (this will be discussed in detail in unit 3).

FRAME 4

A SUMMARY OF DIFFERENCES BETWEEN THE TSIMSHIAN AND CONTEMPORARY U.S. ECONOMIES

Go through your notes from Frame 3 and in the space below list the main differences between the Tsimshian and U.S. economies.

Suggested list of characteristics of Tsimshian economy which are different in U.S. economy.

1. Tsimshian have much more limited economy; it is an advanced food gathering and hunting economy, with woodworking also representing a major form of production. The U.S. is highly industrialized but also an important agricultural producer, raw materials producer, services producer.

2. Tsimshian make very limited use of specialization of production except in fishing and canoe making.

3. Consumption patterns are fixed by custom.

4. Exchange between groups is limited to barter for a few commodities, and extensive gift giving at potlatches; no real money.

5. Saving and investment are usually indistinguishable.

6. The major form of saving is in the accumulation of stocks of foodstuffs and oil.

7. Only one major economic institution which is both the basic production and the basic consumption unit. The local clan group is almost self-sufficient.

8. Many major economic decisions are not decisions but are customs. Activity is greatly tied to seasonal customs.

9. There is considerable individual freedom for many economic decisions and actions involving production and consumption for the nuclear family, but the local clan group chief makes major decisions affecting the whole group.

10. Property is communally owned except for personal belongings.

11. There is a difference in goals. Tsimshian were content with a rather modest way of life. Their major interests related to getting, maintaining and showing off individual social status through the display of wealth.

Summarize these differences by listing the six or seven characteristics of the Tsimshian economy which represent the major differences between the two economies.

1. Limited variety of outputs and per capita income.
2. Limited specialization
3. Limited exchange between economic institutions, no real money.
4. Only one major type of economic institution.
5. Allocation of scarce resources (decisions) strongly affected by tradition.
6. Communal rather than private property which is obtained through heredity.
7. High value on social status.

FRAME 5

SOCIAL FORCES AFFECTING TSIMSHIAN ECONOMY

Tradition, command and market forces all affected the economic activities and decisions of the Tsimshian. In column I of the table below there are lists of types of economic activities and decisions, and in column II one of the three social forces is listed. In column III write an example from Tsimshian life which shows the importance of the social force stated in column II on the activity listed in column I.

I Type of Economic Activity or Decision	II Social Force	III Your Example
1. Consumption	tradition	Salmon and other fish were the main source of food.
2. Production	tradition	Fishing as a major occupation
3. What to produce	command	Production to prepare for a potlatch
4. What to produce	market	Production of oil for barter
5. Exchange	tradition	Potlatch ceremony
6. Exchange	market	Trading of oil for furs
7. How to produce	market	Decision of whether or not to hire labor for house construction
8. How to produce	command	The chief oversees the fishing for candlefish
9. How to produce	tradition	Carving of totem pole
10. For whom to produce	tradition	Status determined the size of potlatch gifts.
11. For whom to produce	command	
12. How much to produce	tradition	The Indians did not work in the winter
13. How much to produce	command	Chief decided on general production plans for the group.

FRAME 6 FIVE BASIC ECONOMIC ACTIVITIES

List the five basic economic activities and for each activity explain in one sentence how it is an economizing activity.

1. Production
2. Consumption
3. Exchange
4. Saving
5. Investment

FRAME 7 SAVING AND INVESTMENT

In the table below, column I lists typical activities in the Tsimshian and U.S. economies. In column II state whether you think the activity represents saving, investment, or both. In column III give your reasons.

I Economic Activity	II S, I, S & I	III Four Reasons
1. U.S. family buys 1 gov't. bond/mo. out of father's pay.	S	This does not represent purchase of a capital good.
2. Tsimshian produce and store candlefish oil.	S & I	The Indians use their resources to produce a capital stock for future use.
3. A local foundry in the U.S. uses profits to build new plant.	S & I	The retained earnings are business savings & the plant is a capital good.
4. Same foundry uses profits to buy government bonds.	S	Government bonds are not capital goods.
5. A Tsimshian chief hires men from other clans to build a new house.	I	Really, this is the same as example 3 above.

FRAME 8 FIVE BASIC ECONOMIC ACTIVITIES

Column I in the table below contains examples of various human activities . In column II check those items which are economic activities. For the checked items in column II write which of the five basic types it is in column III.

I Human Activity	II Economics Activity	III Type of Economic Activity
1. Canoe construction	X	investment
2. Ceremonial dancing		
3. Making ceremonial masks	X	production
4. River or ocean bathing		
5. Berry gathering	X	production
6. Marriage potlatch	X	exchange
7. Indian children at play on the beach		
8. Producing smoked salmon for the winter	X	saving, investment, production
9. Fasting, ritual bathing and seclusion of pubescent girls.	?	Hard to say, she does this to ensure continuation of productive salmon run.
10. Religious ceremonies		
11. Trading oil for buckskin	X	exchange
12. Whale hunting	X	production

FRAME 9 FOUR BASIC ECONOMIC DECISIONS

Column I of the table below contains examples of human decisions. In column II check the examples which are economic decisions, and in column III state what type.

I Human Decisions	II Economic Decisions	III Type of Economic Activity
1. Chief chooses a wife	X	How to Distribute
2. Chief orders group to break fishing camp for winter quarters.	X	How to produce, and how much to produce.
3. Chief hires canoe builder.	X	How and what to produce
4. Indian brave gives half his catch to his chief.	X	How to distribute
5. Chief chooses a nobleman to offer himself as a sacrafice to another tribe which is avenging the murder of one of their noblemen.		
6. Chief declares war to avenge insult.	X	
7. Chief organizes a whaling party.	X	What to produce and how to produce

FRAME 10 IMPORTANT U.S. ECONOMIC INSTITUTIONS

Column I of the table below lists different social institutions in the U.S. In column II check those which are primarily economic institutions and in column III list the major type(s) of activity in which it engages.

I Social Institutions	II Economic Institution	III Major Type(s) of Economic Activity
1. Local church		
2. A mining company	X	production, investment
3. A small family farm	X	production, consumption, saving, investment
4. A credit union	X	saving
5. The American Legion		
6. An urban family of 4	X	consumption, saving
7. A restaurant	X	production, investment
8. The P.T.A.		
9. The Democratic Party		
10. The U.S. Armed Forces	X*	consumption, production, investment
11. The U.S. Post Office	X	production, investment
12. The Executive Branch of the federal Gov't.	X*	saving, investment, consumption, production, exchange

---

* These institutions may be considered primarily military and political institutions, respectively, but they are also important economic institutions.

FRAME 11 DEFINITION OF ECONOMY AND ECONOMIC SYSTEM

A. After class discussion, complete the following statements which explain why an "economy" is an economic system.

An economy is a system of economic institutions.

The word system means "3. The connection or manner of connection of parts as related to a whole, or the parts collectively so related." (Funk & Wagnalls Standard College Dictionary.

A group of things (say, a railraod system) is a system rather than merely a set of things if the component parts are related to each other in a special way which is necessary to make the system work (track interconnection, switching, etc.).

Give at least two examples of systems in the space below?	Give at least two examples of a set of things in the space below:
California highway system a family	3 apples

An economy is a system of economic institutions because:

For example, the Tsimshian economy is better described as a system of local clan groups than as a set of local clan groups because the clans are related through marriage and are dependent on each other for trade, gift exchanges, (acknowledgement of status), cooperation in war, etc.

B. Write one or two definitions of the word "economy" or "economic system".

Your Definition:

Class's Definition: (After class discussion of this frame, the class will arrive at a definition with which everyone agrees. Write it down here).

(See content outline for definition. The definition should include the following: an economy is a system of interdependent economic institutions which organize the five basic economic activities and therefore locate scarce resources to satisfy wants).

FRAME 12 SOCIAL ORGANIZATION OF THE TSIMSHIAN

During the class discussion on the social organization of the Tsimshian, fill out the table below.

Social Organization of the Tsimshian

Types of Social Groups	Composition and Organization of the Group
Tribe (13 Tsimshian tribes)	Each tribe was composed of 4 matrilineal clans, and was located in a separate village.
Clans: 1. Wolfpeople 2. Eagle People 3. Blackfish clan 4. Raven clan	Each clan was represented in each tribe by at least 1 local group. Intermarriage between members of the same clan was forbidden in the same or different tribes and also for similar clans in a different linguistic division of Indians.
Local clan groups	This is the local clan group which lived together in one house. Members were close relatives, matrilineally related. (e.g., chief and his wife, his brothers and their wives, young children, sisters, sons, unmarried daughters), ranked in a continous series from clan chief down. Rank and status was determined by primogeniture. The chief of the local group was a male, the eldest son of the eldest daughter of the previous chief, and titles went to men. All property was jointly owned by the local group and was managed by the chief. All major trade, potlatches, and religious ceremonies were organized by the chief.
Biological families	Each nuclear family lived together in space allotted in the house according to the father's status. The sons left their family at nine to live with their mother's brother and were members of their mother's clan. Daughters remained with parents until marriage. A man could have more than one wife, and a wife was free to leave her husband if her father had payed back the marriage price. Individual families lived together and provided for themselves for the most part.

FRAME 13

EXCHANGE DIAGRAMS OF THE TSIMSHIAN ECONOMY

As diagrams are developed in class copy them in the spaces provided below.

A. Diagrams of the major types of barter exchange.

(See transparencies)

B. Diagrams of the Major Types of Potlatch Exchange

C. Diagram Summarizing the Potlatch Exchanges Between Clans Throughout the Life Cycle of a Local Clan Chief.

D. What is the difference between barter exchanges and potlatch exchanges?

E. Why do these diagrams summarize the economic system of the Tsimshian?

LESSON NO. 5

THE CIRCULAR FLOW MODEL OF THE U.S. ECONOMY

5 DAYS

ISSUED FEB 1966

Table of Contents and Specifications

Instructor's Materials

1. Content Outline
2. Long-term Behavioral Objectives
3. Interim Behavioral Objectives
4. Summary Chart - Content and Objectives
5. Lesson Sequence Chart
6. Lesson Sequence
7. Teacher's Guide to the Student Worksheet
8. Overhead transparencies of the Circular Flow Diagram
9. Outline of information on the structure of the Russian Economy
10. Film of the Animated Circular Flow Model

Equipment Needed

1. Day 1, overhead projector, screen, grease pencil
2. Day 3, 16 mm. film projector and screen

Student Materials

1. Lesson 5 worksheet
2. Summary essay on macro-economics and the circular flow model of the U.S. Economy

LESSON 5 CONTENT OUTLINE

ECON 12 Unit I

Purpose of this Lesson: (1) To derive an exchange diagram for the U.S. economic system which describes the exchanges between the major production and consumption institutions; (2) to use it as a basis for comparing our economy with the Soviet Economy and the Tsimshian Economy; (3) to expand the definition of economics to include a study of the operation of the economy as a complete system; (4) to demonstrate how the U.S. system operates through the use of a dynamic circular flow model of our economy.

Description of the Circular Flow Diagram

A. General Summary
The circular flow diagram is a simplified model of a money exchange, industrialized economy which:

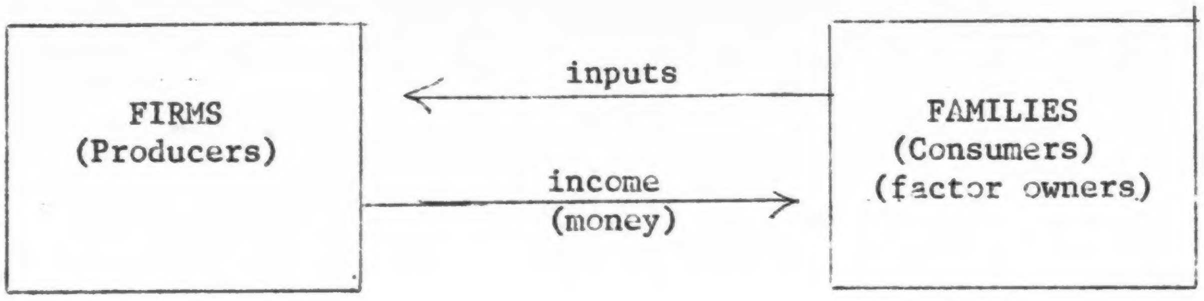
1. Shows the major exchanges which generate income and output;
2. Explains the generation of aggregate income and output as a continual circular flow of goods, services and money between firms and families.

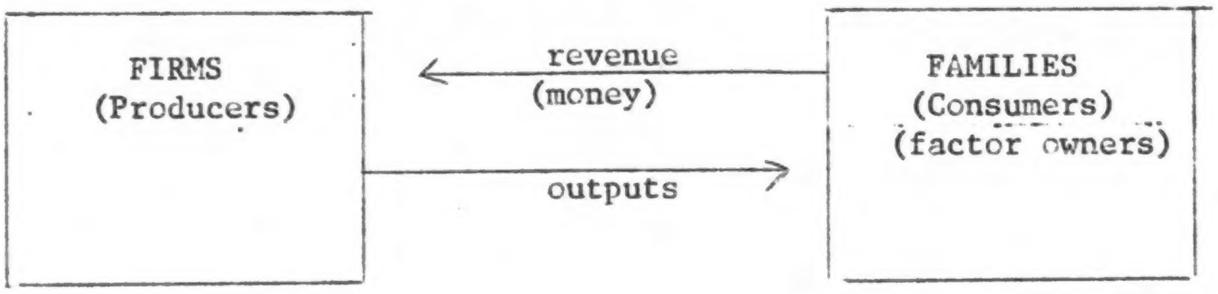
B. The Circular Flow Diagram is a Diagram Summarizing Exchanges Between Producers and Consumers.

1. As a diagram summarizing exchanges, it shows the relation between the two major economic institutions: firms and families.

    a. firms purchase productive services from families, and families purchase final output from firms

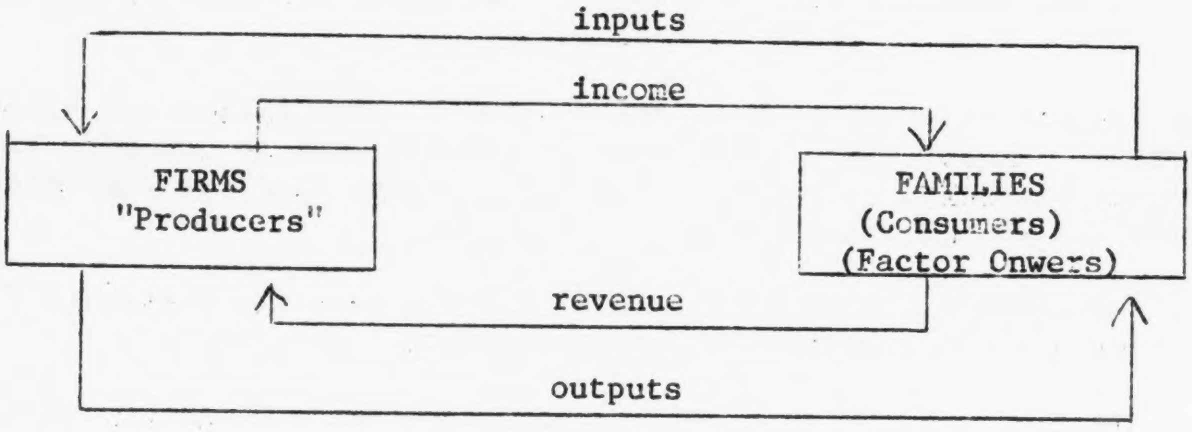
    b. the exchanges are money exchange and can be shown by the diagrams below


FIRMS
(Producers)
inputs
income
(money)
FAMILIES
(Consumers)
(factor owners)


FIRMS
(Producers)
revenue
(money)
outputs
FAMILIES
(Consumers)
(factor owners)

C. The two groups of institutions are completely interdependent. Firms depend on families for the supply of factors of production and for the purchase of their output. Families depend on firms for their income and for the goods and services which satisfy their wants.

D. This relation or interdependence between firms and families is circular:



The money used to pay factor owners is used by the families to buy the output of the firms. The money circulates around the system, back and forth between firms and families. The same is true for inputs and outputs. Inputs are transformed into outputs, which are used by families to generate new inputs.

2. The diagram is called a circular flow diagram because these exchanges between firms and families go on all the time. There is a continuous series of exchanges to generate a continuous flow of production. The economy never stops going. People receive income at periodic intervals, but this is income they were earning while working. They receive income in lump sums at intervals for a flow of services they provided between pay periods.

A. Economists distinguish between quantities as either flows or stocks:

(1) A quantity is defined as a flow if it measures a rate of activity; i.e., it measures something generated over time. Income of any sort is a flow, because it measures services of inputs in some production process; income is earned for work performed over time; but it is zero at any one point in time.

(2) A quantity is a stock if it measures a thing which exists at some point in time. Wealth is a stock because assets in existence can be counted and valued at any given point in time.

An example will clarify this difference between stocks and flows. A firm produced 1600 pairs of shoes valued at $10.00/pair per day. It uses 100 workers who are paid $3.00 /hour.

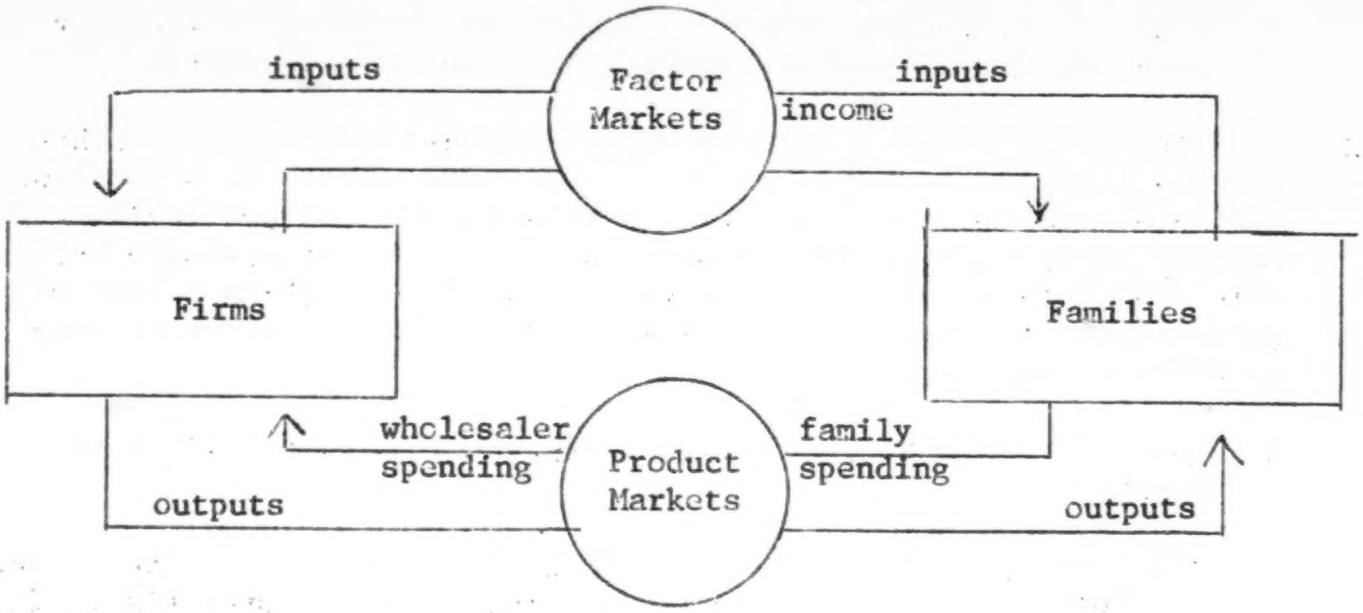
Production is at the rate of 200 shoes/hour. Production is a flow. At the end of the day the firm has 1600 pairs of shoes, a stock. Workers earn $2.00/hour, a flow. At the end of the day the worker has $16.00 in assets, a stock.

B. In the Circular Flow Diagram, the arrows denote the direction of the flow of money or real things.

3. The circular flow diagram is often drawn to show factor and product markets. In the U.S., usually firms and families do not make exchanges directly. Instead, there are exchange institutions which bring buyers and sellers together.

   A. Retailers buy from wholesalers (who buy from the producing firms) and sell to families in product markets.

   B. Similar exchange institutions exist for the sale of the services of factors of production in factor markets. We sell labor, sometimes with the help of labor unions and employment agencies. We sell or lease land or buildings with the help of real estate agencies or leasing companies.



II. The Circular Flow Diagram and The Study of the Economy as a Total Economic System ---- MACRO-ECONOMICS.

A. The Economy as a total economic system.

1. A system is "an orderly arrangement of parts, elements, etc., into a whole, especially such combination according to some rational principle; ....Physiol. An assemblage of organic structures composed of similar elements and combined for the same general functions: the nervous system. (Funk and Wagnall's Standard College Dictionary).

2. In order to fully understand a system, such as a watch, it is necessary to understand
   a) the functions of the system -- a watch tells time
   b) how all the parts of the system serve these functions -- what makes the system work.

3. Economists consider the economy of a country a system of economic institutions bound together through cooperation and exchange.
   a) the function of an economic system is to produce want satisfying output from scarce resources
   b) it is necessary to study the micro systems -- economic institutions -- of the economy to learn how they serve the general purpose of the economy.
   c) it is necessary to study several questions related to the performance of the total economy.

      (1) how to measure total output and income;
      (2) what determines the level of GNP;
      (3) the relationship between total income and total output;
      (4) determinants of the growth in GNP;
      (5) the relationship between GNP and components of GNP-- investment and consumption spending;
      (6) how to measure the stock of total wealth;
      (7) the determinants of the rate of growth on the total wealth of an economy.

   d) the questions listed above are the subject matter of macro-economics. Macro-economics is that part of economic analysis which deals with the study of the total economic system of an economy.

B. The circular flow diagram can be converted into an animated model of the operation of the economy.

1. A movie is provided with this lesson to present this animated or dynamic model of the economy. The circular flow diagram described above can be thought of as a static symbol of the dynamic model in which the arrows stand for actual flows of money or real things.

2. This dynamic model of the economy shows:
   a) more clearly than the diagram the circular flow of money and real things;
   b) how income and output are generated. Output and income are generated simultaneously. Factor owners receive income for producing output.
   c) the interdependence of income and output. Given "a" above, then the total income generated for the society in a given period of time depends on the productive services provided by factor owners during that period. The total output

produced by the society for that period depends on inputs and on the willingness of the families to buy the output. In this model where families spend all they earn and firms spend all revenue for new inputs, it follows that income equals output for any given period of time.

d) the relation between money flows and the flow of real goods and services produced. A money payment must match every bit of consumption and production. People and firms receive money payments for what they produce.

A corollary to this is that all real production and all productive services are valued in money terms.

(1) GNP = market value of final output
(2) National Income = market value of all productive services supplied.

III. The Limitations of the Circular Flow Model

A. Simplifying Assumptions. The diagram and model are based on some assumptions about economic behavior:

1. All factors of production are privately owned by families.
2. All production occurs in firms.
3. Families spend everything they earn on consumption goods and services. Savings = 0.
4. Firms produce only consumption goods and services. Investment (I) = 0.

B. Institutions Omitted from the Model

1. There is no government
2. There are no financial institutions
3. There is no round-about production

C. Limitations in Analysis

1. The model does not explain how markets allocate scarce resources. It does not explain how economic institutions make the 4 basic economic decisions.

2. The model does not explain or show economic growth. It shows how aggregate income and output are generated, but it does not show how they grow. However, the model can be used to figure this out. The factors which cause growth are the factors which one must assume are constant in order to get a constant rate of operation of the model:
   a. constant size and number of firms and families;
   b. constant production, consumption, exchange patterns.

IV. Generality of the Circular Flow Model

A. The model describes any industrailized, money exchange economy. It can even describe the Soviet Economy. The only changes needed to describe Russia are changes in labels to show that firms are state-owned and that there is no property income flowing into households. These changes represent minor changes in the diagram, but they represent major differences in economic organization and in values. These differences between the U.S. and Soviet economies do not show up until we study the organization of economic activity.

B. The model does not describe the Tsimshian economy, although there are some similarities between the exchange diagrams for the U.S. and Tsimshian economies. The differences:

1. In the Tsimshian economy the exchanges are between self-sufficient local clan groups. In the U.S. and Russia, they are between producing and consuming units.

2. In the Tsimshian diagram the exchanges are barter or gift exchanges. In the U.S. and Russia they are money exchanges.

LONG-TERM OBJECTIVES

Given a circular flow diagram, as shown in the Content Outline, the student will be able to analyze and evaluate its significance in describing a money exchange economy by performing the following tasks:

1. Given examples of market institutions, correctly identifies them as operating in either a factor or product market.

2. Defines factor and product market in a written sentence as, respectively, a market in which the services of factors of production are sold, and a market in which final goods and services are sold.

3. From short descriptions of the exchange systems of four economies, list those which can be described by a circular flow diagram.

4. From a list of characteristics (institutions, exchanges, economic activities) of our economy, identify those items which are not described in the circular flow diagram.

5. From a list of alternatives, correctly identify the main features of the U.S. economy shown by the circular flow diagram. These are:
   (a) specialization has created separate production and consumption institutions;
   (b) there are two main types of exchanges between firms and families;
   (c) exchanges are money exchanges;
   (d) total income equals total output for the whole economy for some given period of time;

(e) the economy is in continuous and circular operation, so that any change in income is also a change in output;

(f) one can measure income and output in either real or money terms for any given period of time, the output produced by firms is "equal" to the firms.

6. Student states in his own words why, for any given period of time, national income equals the GNP (market value of output). Answer: income earned for a given period and output by firms for that period are both generated by the same thing, production for that period. Since families pay out all income on consumption spending, and since firms pay out all revenue on inputs, GNP = National Income.

7. Explain in writing why GNP and National Income of production are measured in money units instead of in "real" units.

INTERIM OBJECTIVES

The student will:

1. Draw and label the circular flow diagram for the U.S.
2. List at least 10 characteristics of the U.S. economy not shown or accounted for in the diagram.
3. Draw a circular flow diagram for Russia and list difference between U.S. and Russian economies which are shown by the diagrams.
4. List assumptions implicit in the circular flow moving model which keep the system operating at a constant speed: firms and families have a constant size and number; production, consumption and exchange activities remain unchanged.
5. State in writing why the circular flow diagram or aminated model are useful for studying our economic system: because they describe the characteristics listed in long-term behavioral objective 5.
6. State in writing why the circular flow diagram is called a circular flow diagram: because it shows the constant operation of the economy as a never ending, regenerative cycle of economic activity which generates flows of real inputs and outputs and money income.
7. Given alternatives, recognize the correct reason why it is essential to study an economy as a complete system: because it is necessary to understand how the economy performs its basic function.
8. List the things which must be studies about the total economy (See Content Outline II, A, 3c).
9. From alternatives, recognize the definition of micro-economics as the study of the functioning of the total economic system.

CONTENT AND OBJECTIVES

SUMMARY CHART

Content or Concept	Essential Material (long-term objectives)	Interim & Experience Objectives	Purpose of Learning Exp.	Learning Drive Device
Exchange Diagrams for the U.S.: Circular Flow Diagram	1. Characteristics of U.S. economy described by the diagrams	a. Derive diagrams b. Draw & label on worksheet	a. To allow students to discover the diagrams b. To learn its characteristics by drawing the diagrams	Discussions & worksheet overhead transparencies
Factor & product markets	2. Define factor & product markets examples of market institutions in each	a. Draw & label new diagrams	a. Same as above	worksheet
		b. discriminate between e.g.'s of factor & product market institutions	b. apply definitions	
	3. Type of economic system described by the circular flow diagram	a. Inquiry session to alter diagram to describe Russian economy b. Compare U.S., Russian & Tsimshian exchange diagrams	a. To reinforce understanding of the use of circular flow diagram; get students actively engaged in analyzing the diagram b. Same as A, to introduce study of comparative economic systems	
		c. Determine what kind of economy is described by circular flow - industrialized, monetary economy	c. To induce and get general acceptances of the generalization	
	4. Limitations of Diagram	d. List characteristics of U.S. economy not shown on diagram	d. To get students to analyze diagram and reinforce meaning and usefulness of the diagram	Discussion and worksheet

Content	Essential Material (long-term objectives)	Interim & Experience Objectives	Purpose of Learning Experience	Learning Device
Macro-Economics A Model of the total economic system	5.&6. Main features of the U.S. Economy described by Circular Flow model, in particular, why GNP = National Income.	a. Review definition of system, analyze function and parts of 5 common systems b. List important features of total economic system which should be studied c. Define macro-economics	a. To allow students to discover the need to broaden the study of an economy to macro-economic problems b.-c. To learn an approximate definition	Discussion & worksheet
	diagram movie by	d. View circular flow diagram movie by writing down observation of parts & operation of the animated model	d. Give students practice in making careful observations, to interest students in the analysis to come, to provide a visually compelling and understandable model	Movie of Circular flow
		e. Relate the movie model to questions in macro-economics and make generalizations about the operation of the economy as a whole	e. To give students practice in economic analysis	Discussion & worksheet
Stock & Flow variables in economics	7. Define, identify examples of each	a. Review of how flows are shown in the film	a. To reinforce understanding of the meaning of GNP, and wealth (or assets)	Lecture - Discussion, worksheet, and movie
		b. Define terms	b.-d. Learn definitions	
		c. Identify examples,	To take advantage of student's understanding of the circular flow diagram to explain why economists make most measurements in money units	Discussion
Measuring GNP in Money Units	8. Explains why economic stock & flow quanities are measured in money units rather than in physical units	d. Compute rates		

DAY 1

1. Describe the purpose of the first part of the lesson: to construct and analyze exchange diagrams for the U.S. and Russian economies; to compare the exchange diagrams for the U.S., Russian and Tsimshian economies.

2. Quickly (5 minutes) review information from Lesson 4 by asking the class the following questions and by having students supply answers orally.

   A. For the Tsimshian economy, what were the main exchange, and between what economic institutions did these exchanges occur?
   Answer: Potlatch exchanges between local clan groups, barter between local clan groups.

   B. What are the main differences between the Tsimshian and U.S. economies?
   Answer: (1) Separate producing and consuming institutions in U.S.
   (2) Money and markets are very important in the U.S. economy; tradition is important in the Tsimshian economy;
   (3) The U.S. economy is more dynamic; there is more change and growth.

3. Complete Frame 1 of the worksheet to derive a circular flow diagram. In a class discussion ask students questions about the U.S. economy from Frame 1 of the worksheet. Elicit class responses quickly. These questions are easy to answer. Their main purpose is to lead students to the information which will enable students to construct the circular flow diagram. Students should answer your questions orally, and write the correct answers in the space provided in Frame 1.

   A. When you get to Part E, try to get students to develop the circular flow diagram on their own. Either ask a willing student to draw his suggested diagram on the board, or draw the diagram yourself from instructions provided by students.

   B. For parts E- H, and I which ask students to draw diagram, after you construct the diagrams, show the overhead transparencies of the diagram and ask students to copy it in the space provided in the worksheet. You should try to complete this frame by the end of the period.

Homework: Worksheet, Frame 2

DAY 2

1. Derive an exchange diagram for the Soviet economy. (This is an optional exercise. It's main purpose is to further reinforce the meaning of the circular flow diagram by getting students to figure out how to change it to make it describe another industrial money exchange economy. It is also useful as an introduction to the study of the Russian economy. However, if you feel students have a complete understanding of the circular flow diagram, you may want to eliminate this exercise).

   A. Ask students, as a class activity, to alter the circular flow diagram for the U.S. to make it appropriate for the Russian economy.

   B. Students do not have enough information about the Russian economy to do this assignment without help. We suggest that you act as a resource person to answer any student questions which students need answered in order for them to collect the necessary information to complete the assignment. Instruct students that they are to figure out the changes in the diagram for themselves, that your only function is to answer the necessary factual questions which they need to know in order to complete the assignment. Instruct students to ask questions so that you can answer with a yes or no. The purpose of this assignment is to force students to frame the necessary questions which will lead to a solution of the problem.

   To aid you in preparing for this activity, the attached outline on the Russian economy is provided. (It is the outline which was provided in the summer workshop).

   C. Instruct students to complege Frame 3 A and B which summarize this activity.

   D. Use Part C of Frame 3 as a basis for a brief class discussion, and ask students to summarize the discussion by completing the frame in their worksheets.

2. Begin the second part of the lesson -- the study of an economy as a complete economic system (macro-economics). Describe the purpose of this part of the lesson:

   A. To expand the definition of economics to include a study of the operation of the economy as a complete system;

   B. To convert the circular flow diagram into an animated model of the U.S. economy;

   C. To use this model to explain certain important features of the U.S. economic system.

3. Conduct a lecture-discussion to justify the need for studying the economy of a country as a total system:

   A. Review the conclusions of Lesson 4 -- about the procedure for studying an economic system:

      (1) Identify and describe the decision-making behavior and economic activity of all major economic institutions;

      (2) Describe the interdependence between these institutions, the exchange system which ties the institutions together.

   B. Review the definition of the word system. "A system is an orderly arrangement of parts, elements, etc., into a whole; especially such combination according to some rational principle; ... Physiol. An assemblage of organic structures composed of similar elements and combined for the same general functions: the neverous system." (From Funk and Wagnall's Text Edition of the Standard College Dictionary, Harcourt, Brace and World).

   C. Point out that we have not yet considered the need to study an economy as a totality, but that the circular flow diagram does summarize the economy as a total system. Ask students these questions:

      (1) What conclusions can you draw about the functions of our economy from studying the circular flow diagram?
      Answer: Satisfy wants through the production, distribution and consumption of goods and services.

      (2) Are these functions of any economic system? (That is are these functions characteristic of all economies)?
      Answer: Yes

4. Review the meaning of the word system. This experience is included to make sure that students understand the difference between studying the economy in parts and studying it as a total system, one big totality. Students must recognize that in order to understand an economic system one must understand two things: (1) the functions of the system, and (2) how the parts of the system serve these functions.

   Ask students to read the short discussion about systems at the beginning of Frame 5. Then complete Frame 5 as a group activity in class. The examples of systems given in Frame 5 are all common systems with readily identifiable functions and parts.

Homework: Complete Frame 4 and Frame 5 (any parts no completed in class).

DAY 3

1. Review Frame 4 and any part of Frame 5 which students completed as homework.

2. Studying the U.S. economy as a total (macro) system.

   A. Ask students to suggest some of the questions which must be answered in order to describe more fully the operation of the total economic system of a country, and which represent a kind of analysis which is different from the study of individual economic institutions (micro systems). You want students to suggest areas of study related to macroeconomic theory, such as:

      (1) What is the level of National output (Gross National Product)? That is, how do you measure GNP?
      (2) What determines the level of GNP?
      (3) What is the relationship between GNP and National Income?
      (4) What determines the growth or decline in GNP from one year to the next?
      (5) What is the relationship between GNP and total investment, total consumption?
      (6) What is the relation between GNP and the supply of money?
      (7) What is the level of national wealth? That is, how do you measure the total wealth of the economy?
      (8) What determines the rate of growth in the total wealth of an economy?

   B. The end objective of this activity is to come up with these questions. Try to get students to suggest them themselves. If they do not, or do not raise all of them, then state them yourself.

   C. Ask student to complete part A of Frame 6.

   D. As part of this activity discuss each question briefly. Try to get students to answer these questions. They should not be able to do very much, but it is important that students start to think about the general operation of the economic system as a preparation for their viewing the circular flow model film. You want students to become interested in macro-economic questions to recognize the difficulty of answering these questions with the tools and knowledge available to them, and to be ready to accept the need for some sort of simplified, forma, abstract means of studying these problems -- a model of the economy.

   E. Define this area of economics as macro-economics (See Content Outline IIA, 3d).

F. Point out that part of the difficulty in studying macro-economics is that, unlike other systems -- the car, the human a house -- one can't see the total economic system. One can only observe the part of it in which one is involved himself. In the same way that one can see a human being without being able to observe the functioning of its vital micro-systems, so one could observe the U.S. economy from a space ship without seeing how national output is generated and distributed.

3. A Model of the Economic System

A. Introduce the movie of the circular flow model. (The purpose of the film is to provide an animated model of the generation of national output). Explain that the movie is a very simplified model of the operation of the economy. Close observation of the model suggests answers to some of the questions raised about macro-economics.

B. Instructions on viewing the film. The film shows the operation of the model economy for three months, then repeats the same thing over again to enable you to show the movie twice without having to rewind it. Each complete showing lasts about four minutes.

(1) Tell students to observe the film carefully. Show the film through the end of January and stop it. Ask students to complete part B of Frame 6: name and briefly describe all parts of the model. To aid students, a drawing of the model is provided on page 11 of the worksheet.

(2) Finish showing the film through once and stop the projector. Instruct students to complete part C of Frame 6: Write down all of their observations of movements of parts of the model. They should be able to write these observations as the movie is being shown.

4. Class discussion of the operation of the movie model.

This class discussion should be brief as possible. The purpose is to pool the observations of the class, to make sure that all students saw the important aspects of the model.

A. Ask students for their observations and write down the correct observations on the chalk board. Ask students to make corrections on their worksheet.

C. For incorrect observations, try to get other students to make corrections. Only accept observations of what was in the movie. Do not accept any analysis of the model.

D. If necessary, show the second loop of the film to clear up any questions. This time you may want to carry on the discussion as the film is shown.

Homework: Ask students to try to apply what they observed in the films to answer the questions in Frame 7, to prepare for the class discussion the next day.

DAY 4

1. Analysis of the Circular Model to Describe Important Features of the Operation of the U.S. Economy.

A. Show the film through again.

B. Complete Frame 7. In a class discussion ask students to review the questions stated in part A of Frame 6 and repeated in Frame 7. For each question, after the class has done a satisfactory job or relating the question to the animated model, ask someone to summarize the discussion. Write the summary on the chalk board, and ask students to copy the summary in the space provided in Frame 7. (Note: The typist did not leave enough space for a complete answer in the worksheet).

C. The purpose of this discussion is to investigate which of the questions can be answered with the aid of the circular flow model, and to arrive at tentative answers. Use the sample answers provided in the Teacher's Guide as a basis for designing your classroom strategy.

The discussion will allow you to bring up two important issues which students usually have difficulty handling, but which you should be able to work through if students were observant enough in viewing the movie:

(1) The distinction between stock and flow variables in economics. (See Content Outline for an analysis of these terms). National income theory or analysis is an analysis of the determination of the flow of income. Theories of economic growth are theories of what determines the growth of the stock of wealth of an economy. It is important for students to see that there are two important areas of study, and that the variables involved are different in kind. One type of variable -- flow variables, such as

income, production, consumption -- are measured by rates. The other type of variable -- stock variables, such as wealth -- are measured by real amounts.

(2) The meaning of a rate. National Income is measured as a rate of flow of income earned in a particular period of time: e.g. $580 billion dollars per year. The $580 does not actually exist. It is the income generated by economic activity over a period of time. It is a sum. The meaning of a rate is portrayed in the movie. The rate of income generation is the speed of the flow of the inner circle. The measurement of the rate is the sum accumulated in the counter. The sum is a way of quantifying -- measuring -- the speed of the flow. (In terms of the calculus, the movie shows the relation between a derivative and the integral).

On the other hand, the number used to measure a stock variable does actually represent the amount of the thing which is in existence at some given point in time.

(3) An understanding that GNP and National Income are flows, that therefore they can only be quantified by adding up the amount generated over a period of time. At any one point in time, GNP = 0. GNP only has meaning as a rate per period of time.

(4) The constant operation of the economy. GNP is generated continuously. The economy never stops, not even on Sunday!

(5) The distinction between the real and money value of income or output. In our economy, because all output and inputs are purchased for money, it is possible and convenient to measure real things in money units of measurement instead of in physical units. It is meaningless to measure GNP in physical units because total output is made up of so many different things. But GNP can be measured in terms of the market (money) value of what is produced.

The fact that physical things can be measured by their monetary value makes it possible for economists to measure things. However, measuring things in money units creates problems too. Whenever the price of the thing changes, the money measurement of it also changes. This problem is serious, and the economists solution is to deflate things measured in money units to eliminate the effect of price changes. This last issue will not be taken up until Unit II of the course. At this point, it is important to take the opportunity presented by the film to get students to see why economists measure things in money units instead of in physical units.

Homework: Complete Frame 8 and 9.

DAY 5

1. Review Frames 8 and 9.
2. Go on to Lesson 6.

LESSON NO. 5

CIRCULAR FLOW MODEL OF THE U.S. ECONOMY

LESSON SEQUENCE CHART

CONTENT	TEACHER	VISUAL
DAY 1		
Exchange Diagram for the U.S. economy	1. Review information from lesson 4. 2. Fast paced question & answer session to develop the circular flow diagram, describe its characteristics, show its limitations, & provide' students with practice in drawing the diagram.	Use chalk board to develop the diagrams. Use overhead transparencies as a guide for students in completing the diagrams on their worksheet.
DAY 2		
Exchange diagram for the Russian economy	Conduct an inquiry training session in which students alter the circular flow diagram to make it apply to the Russian Economy by asking teacher for any information on Russia necessary to complete the assignment.	Chalk board to develop exchange diagram
Comparison of U.S. & Russian Economies	Class discussion on similarities & differences between Russian and U.S. economies.	
The need to study an economy as a total economic system	1. Review conclusions from Lesson 4 on how to study an economy. 2. Review definition of "systems" & complete Frame 5 in group discussion.	

WORKSHEET	HOMEWORK	EVALUATION
Frame 1: questions related to the development of the circular flow diagram, an exchange diagram for the U.S. economy. Students complete the frame on the basis of class discussion. Frame 2: summary quiz questions on the diagram	Frame 2, worksheet	Frame 2, worksheet
Frame 3: students draw Russian diagram, summarize comparison of U.S. & Russian economies.	Frame 4: short-answer questions comparing Tsimshian, Russian & U.S. economies through analysis of exchange diagrams.	Frame 4
Frame 5: for five examples of systems students must identify parts of the system & major functions of the system.	Complete Frame 5	Frame 5

Lesson Sequence Chart (Continued)

CONTENT	TEACHER	VISUAL
DAY 3		
Macro-Economic System The major research questions of Macro-economics, the study of the economic system as a whole.	Tries to elicit from students some of the major things to study about an economy as a whole. Tries to get students to answer these questions, and to see the difficulty of answering them.	List on chalk board
An animated Circular Flow Model of an economy.	Show movie - on animated circular flow model. Students write observations about the model's parts & operation in Frame 6.	4 minute movie of an animated circular flow model showing income generation for 3 months.
DAY 4		
Analysis of the Circular Flow Model to: 1. show how to measure GNP 2. what determines the level of GNP 3. the relation between GNP & National Income 4. the relation between GNP & Consumption spending	Leads a class discussion in which students relate the movie model to the questions about the economy as a whole in Frame 7.	
Discussion of vocabulary: 1. stock & flow variables 2. real & money measures of goods & services 3. rates	Go back over those concepts which were raised in completing Frame 7, and help students relate what they saw in the film to those concepts. If necessary, show film again.	
DAY 5 Review Frames 8 and 9		
SUMMARY		

WORKSHEET	HOMEWORK	EVAULATION
Frame 6, A: Students record list of major issues involved in macro-economics.	Frame 6, A:	
Frame 6: write observations of the parts & operation of the model.	Try to answer questions in Frame 7 by applying observations about the movie model.	
Frame 7: provides space to summarize class discussion on the the relevance of the movie model to seven questions about micro-economics.		
Frame 8: short questions on important points raised in day 4 class discussion.	Frame 8 and 9	
Frame 9: summary frame testing student knowledge of the usefulness and limitations of the circular flow model.		Frame 8 and 9
		End of lesson test End of Unit test End of course test

ECON 12

LESSON NO. 6

ECONOMIC VALUES, GOALS AND POLICIES

4 DAYS

Table of Contents and Specifications

Instructor's Materials

1. Purpose of the lesson
2. Content Outline
3. Long-term behavioral objectives
4. Prerequisite behavioral objectives
5. Lesson sequence
6. Student essay
7. Worksheet
8. Answers to worksheet

Equipment Needed - None

Student's Materials

1. Purpose of the lesson
2. Content Outline
3. Student essay
4. Worksheet

LONG-TERM BEHAVIORAL OBJECTIVE

LESSON NO. 5

For instructors

The student will be able to:

1. name and explain meaning of the four basic categories of economic goals of U.S. society, as follows:
   a. freedom - this means the freedom to buy and sell in the market place, to own property, and to enter into any economic activity for which an individual or group has the capacity. Freedom is created, defined, limited and changed by society.
   b. justice - the coherence, in the minds of most people that the actual economic organization is reasonably close to an ideal organization. The belief that justice prevails centers on two main issues (1) is the law
   c. progress - that our material welfare shows a steady improvement, that is
      (1) the national output per capita rises
      (2) that the quality of our environment, air, water, living space, cultural resources is maintained or improved.
   d. stability - that economic security is maintained by high levels of employment, business activity and price stability.
2. state that freedom and justice are primarily qualitative although rank ordering is possible and meaningful comparisons between freedom and/or justice in two or more systems can be made.
3. state that progress and stability are subject to quantitative measurement, although each must also be judged qualitatively.

LESSON NO. 6

PREREQUISITE BEHAVIORAL OBJECTIVES

For Instructors

1. Given a list of goal-directed economic actions and/or policies of private and public institutions, student will place them in the proper category or categories given in Long-Term Behavioral Objective No. 1. For example:

   a. social security - stability
   b. high wages - progress, stability
   c. pension plans - stability
   d. speeding automation - progress
   e. medicare - security
   f. minimum wage laws - justice; stability
   g. building rapid transit systems - progress
   h. fair employment laws - justice
   i. reciprocal trade policies - progress

2. Given a list of private and public actions and policies which promote one goal (s) and at the same time impede the achievement of another goals (s), student will indicate which goals are promoted and which impeded, e.g.
   a. Pollution control in industrial plants promotes progress in raising the quality of our environment and impedes freedom in conduct of business.
   b. Zoning law changes from residential to business use promotes the freedom of one set of persons and impedes the freedom of action of another set.

3. Student produces a written statement describing the relationship between social values, economic goals and economic institutions which contain the following points:

   a. that social values determine the economic goals of a society
   b. that economic institutions are shaped by economic goals
   c. that economic institutions also produce changes in economic goals and that both institutions and goals produce changes in social goals.

4. Given the following statements about the resolution of socio-economic conflict, the student chooses the correct statements.

   a. is a necessary consequence of scarcity and a natural part of economic existenc.
   b. there is always an ethically correct side of a conflict
   c. courts resolve conflicts in accordance with what is right

d. in our society, laws and their administration resolve conflicts
e. in our society, buying and selling resolve conflicts
f. in Russia, major conflicts of interest develop over who owns the means of production.

5. Student will be able to write a definition of economic policy which states that economic policy is the application of economic theory and techniques to the practical problems of individuals, businesses and governments.

6. Student will be able to state the steps in making a rational decision on economic policy:
   1. state the goal you wish to achieve.
   2. determine that the goal is consistent with your other goals.
   3. list the things which limit the policies you could choose.
   4. list the alternative policies available to you.
   5. calculate the cost of each alternative.
   6. choose the most economical policy.

LESSON NO. 5

LESSON SEQUENCE

For instructor

DAYS 1-2

1. Student essay to be assigned for reading for homework on previous day. This essay covers most of the lesson content; however, the content is also covered in the Worksheet. Slow readers and non-readers can learn the material in class. The essay is designed to present an adult discussion of the complex problem of understanding the relationship between values and goals and the conflicts which arise from trying to achieve our economic goals. The essay could be discussed at the beginning of the lesson, or the discussion could take place while the Worksheet frames are being completed.

2. Complete Frames 1-2.
   Frames 1-3 can be done either as class exercises or by dividing the students into work groups of 5-10. If the latter method is used, the instructor can take the completed worksheet from one of the groups and use it as a focus for a discussion which will enable the whole class to share in the ideas of each group.

3. Assign introductory reading in Frame 3 on the night before the frame is discussed in class. The two documents can be read and discussed in class, and the students can compose their responses to the worksheet collectively or individually, as the instructor wishes.

4. Complete Frame 3.

DAYS 3-4

The method of making rational decisions about economic policy can best be accomplished by having the students go through the decision-making process themselves. This can be done in any way that suits the instructor and the students. One possibility, in classes no larger than 35 students, would be to hold two debates. Choose two economic problems that are currently being debated, e.g., whether or not to trade with China; whether or not to tear down the Embarcadero freeway; whether or not to pass a bond issue for the Contra Costa County Junior College district; or the school's annual debate topic if appropriate.

Assign half the class to each topic and then let each half divide on the issue as it pleases them. If there are any left-overs, assign them arbitrarily so that there are four groups of approximately the same size.

It will be the responsibility of each group to defend its position in a debate. Each team should be allowed to decide which members of the team will actually participate in the debate. Each team would be required to prepare a position on paper setting forth the argument in defense of the policy it has chosen. The members of the team would be graded on the quality of the position paper and of the performance for the team in the debate.

The four position papers would be graded by the instructor, the two debates by the students. For each debate, the half of the class not in the debate would act as judges. The students would be expected to judge the debate on the following points:

1. Data presented - sources, correctness and thoroughness
2. Logic - is the argument presented consistent with the policy being defended
3. Economic validity - is the argument valid economically, e.g., does the argument include a sound analysis of alternative costs; does it take into consideration the actual constraints which the policy maker faces.

The students who are judges will then vote to determine the winning team and each student will write a defense of his vote. These will be graded by the instructor.

Frame 4 of the worksheet contains some information on a recent national debate over whether or not to ship wheat to Russia. The main arguments on each side of that debate are given so that students can see the sort of evidence and arguments which could be used in a debate on trade with China.

The difficulties in teaching decision making this way lie in the logistics of having students gather the necessary data. If this can be done, the method should work very well. If it can't be done, then the students can be assigned individual problems, or economic problems can be analyzed during class discussion. It might be necessary for the instructor to gather the data himself. If the task is assigned to students, the issues should be ones that are currently being discussed in the newspapers and journals of opinion.

LESSON NO. 6

ANSWERS TO WORKSHEET

For instructor

Note: These answers are typed to fit the space on the worksheet. If you wish to put them on the worksheet, scissors and scotch tape will do the job.

Tsimshian values. Frame 1

The Tsimshians placed a high value on social stability and the maintenance of social status. They valued the family group,and individuals, except for the leaders, were submerged in the group. The traditional modes of production and the highly decorated objects of common use indicate that a high value was placed upon beauty. Their loosely organized political system indicates that they did not wish to develop an economically powerful society, and their relative indifference to production innovations indicates that they did not value sustained material improvement.

U.S. Values.

Americans practically live in the market place, which is one of the most dynamic economic institutions. As a consequence they have accepted the possibility of rapidly changing social status as a virtue. The high level of innovation indicates that increasing levels of material well being is valued. Clearly, a rising standard of living for everyone makes a decline in status for some less dangerous for the society. Americans, with their highly organized political system, value power.

Frame 2

JUSTICE	FREEDOM	PROGRESS	STABILITY
medicare	war in Vietnam	youth job training	war in Vietnam
youth job training	buying a car	airline subsidies	airline subsidies
industrial smog control	anti-trust laws	automation in industry	saving by a household
auto smog control	Civil Rights laws	saving by a household	federal taxing and spending
anti-trust laws	buying and selling by a business firm	working one's way thro college	full employment law
	laying off workers	Civil Rights law	being drafted into army
	changing one's job		
	changing the brand of one's lipstick		

Frame 2 - cont'd

Six choices:

1. Industrial smog control. This conflicts with the freedom of the firm to make its own economic decisions; at the same time it improves economic justice.

2. Anti-trust laws. Increases the freedom of small firms to operate, and this is considered an improvement in justice, but it interferes with the freedom of large firms.

3. Being drafted into the army is designed to increase our safety and thus the stability of our system, but it greatly limits the freedom of the draftee.

4. Airline subsidies help increase the stability of the air transport industry, but this use of our taxes is a deprivation for the people who never fly on airplanes.

5. Laying off workers by a firm is an act of freedom, but it does little to increase a worker's security which is an important part of stability.

6. Automation in industry helps progress, but by increasing the danger of unemployment it reduces our stability.

Frame 3 - questions

1.

With the increasing size of American industrial enterprises throughout the 19th century, it became apparent to the working men that they either had to organize or become industrial serfs. In the face of hostile public opinion they conducted a long and bloody struggle for the right to organize. However, it was not until the collapse of business power in 1929 that labor was able to gain the rights it sought both in federal legislation and in legal interpretation by the courts.

2.

The freedom of the workers was increased and that of the employers decreased. By 1935, the workers could force changes in working conditions and the employers could no longer fire them, lock them out or blacklist them.

3.

The changes were mainly caused by three forces:

1. industrialization and concentration of industry
2. the democratic political process
3. the ideology of freedom

Frame 3 - cont'd

4.

The major changes were:

1. the rise of great industrial concentrations
2. the rise of nationally organized labor unions
3. the decline in agriculture and of rural political power

LESSON NO. 7

WHAT IS ECONOMICS?

2 DAYS

Instructor's Materials

1. Purpose of Lesson
2. Content Outline
3. Prerequisite Objectives
4. Experience Objectives
5. Summary Chart - Content and Objectives
6. Lesson Sequence Chart

Student Materials

1. Program on the Definition of Economics
2. Questionnaire on Student Evaluation of Unit I

PURPOSE

The purpose of this final lesson in Unit I is to review the previous six lessons and to enable students to learn a complete definition of economics which they can write and defend. Students are required to explain the four necessary parts of the definition, to compare different correct definitions, distinguish economics from the other social sciences, to describe the two major fields of economics (macroeconomics and microeconomics), and to distinguish between the science of economics and practical economic decision and policy making. Finally, students will be able to use the definition of economics by analyzing some popular misconception of what economics is.

CONTENT OUTLINE

I. The Definition of Economics

A. A definition of economics as a social science and which establishes a frame of reference for studying economics.

1. Lionel Robbins defines economics as "the science which studies human behavior as a relationship between ends and scarce means which have alternative uses." (p. 16, The Nature and Significance of Economic Science.)

2. This definition sets forth the four principal characteristics of economics:

a. "science." This means that economics is a study which uses the scientific method, a procedure which involves the following steps:

(1) collection of data or observations about the thing to be studied

(2) statement of hypotheses about the nature or operation of the things being studied

(3) empirical or theoretical testing of the hypothesis.

b. "studies human behavior as a relationship." The fact that economics studies human behavior makes it a social science. Social sciences study group actions and organization as well as individual behavior. This phrase also implies that the science of economics is not limited to some subgroup of human behavior from one point of view.

c. "between ends and scarce means." The aspect of all human behavior studied by economists is any behavior which involves achieving ends when the means are scarce. Economics is the study of human behavior related to solving the scarcity problem, problems which arise because wants are greater than the available resources to satisfy these wants.

d. "which have alternative uses." Solving the scarcity problem is complicated by the fact that there are alternative uses for the scarce means (resources). If the means were scarce, but there was only one use for each resource, it would then be easier to solve scarcity. The resources available would completely determine the possible outputs. The only problems to be solved would be to decide how many resources to use --how much to produce--and how to distribute the output--for whom to produce. The fact that there are alternative uses for scarce resources means that people must also decide what to produce and how to produce these outputs.

3. A restatement of Robbins' definition into plainer English is, Economics is the social science which studies how people decide between alternative uses of scarce resources to satisfy wants.

B. The Relations between this Definition of Economics and What has been Learned About Economics in Lessons 1-6.
1. To get a firmer grasp on just what it is that economics studies it is important to delimit the field of study so that a person can distinguish between what is and what is not economics.
2. Because economists do not confine their study to some very specific group of things, it is impossible to state a definition which is exact. But it is useful to delimit the field so that the student knows the group of things studied which form the core of the science at the present time.
3. For this purpose, it is useful to identify certain types of human behavior which are primarily economic, and which are therefore more often studied by economists. There are three important kinds of social behavior which are important:
    a. activities which are primarily economic in the sense that they involve the use of scarce resources to satisfy wants:
        (1) production
        (2) consumption
        (3) exchange
        (4) saving
        (5) investment
    b. decisions which are primarily economic in the sense that they involve choices about how to allocate scarce resources to satisfy wants:
        (1) what to produce
        (2) how to produce this output
        (3) for whom to produce this output
        (4) how much to produce in total
    c. Economic organization. People organize into groups, economic institutions, to make these decisions and to carry out this activity. The total group of these economic institutions in a given society, when studied together, is called the economy or economic system of that society.
4. Economics is the social science which studies the organization of society to make decisions and carry out activities which allocate scarce resrouces to satisfy human wants. Economics is the study of economies or economic systems.

C. The Relation between Economics and the Other Social Sciences
1. To get a still firmer grasp on what economics studies, it is also important to be able to distinguish economics from the other social sciences.

2. Just as it is impossible to stake out precise limits on what economics studies, it is impossible to completely delimit the area of the different social sciences. The disciplines overlap. If you can see in what ways they differ and in what ways they overlap, you can get a clearer understanding of the subject matter of economics.
3. Statements defining some other social sciences:
   a. Anthropology is the study of the physical and cultural characteristics of man, particularly of primitive man.
   b. Political Science is the study of government and political power (when political means the body politic).
   c. Sociology is the study of society, the forms of groups within society and the interaction of these groups with one another.

II. Major Parts of Economics

A. A division according to the way an economy is studied.

1. Microeconomics is the science which studies the individual economic organizations (institutions) in a society, and the relations between these individual organizations (institutions).
   a. The institutions studied: major production, consumption, exchange saving and investment institutions in the society. In the U.S., this includes the family business firms labor unions, financial institutions, government agencies involved with taxation and government spending.
   b. These institutions are studied in order to enable the student to describe and predict how these organizations make the three allocation decisions of what to produce, how to produce and for whom to produce.
2. Macroeconomics is the science which studies the operation of the economy as a total economic system. This study is primarily an inquiry into what determines the total level of production at one point in time and over time.

B. The Distinction Between Pure Economics and Applied Economics

1. Pure economics is the purely scientific part of economics which is concerned with increasing knowledge about economic systems, both from the point of view of microeconomics and of macroeconomics. Pure science deals with describing explaining and predicting the thing being studied.
   a. pure economic analysis requires the use of methods which are scientific, and requires the economist to study the the subject objectively, with the end purpose of increasing the body of economic knowledge.
   b. pure research is judged according to its success in explaining and predicting.
2. Applied economics is the use of economic knowledge to solve practical economic problems. These problems usually require economic policy decisions designed to achieve specific economic goals.

a. Economic policy is defined as a plan of action or a guide for making decision.
b. The procedures used in applied economics are rational decision making procedures which will yield a wise decision stating the action to be pursued to achieve some goal or goals.
c. Economic policies (applied economics) are judged by their success in achieving the intended goal(s). The test is pragmatic (does the policy work?).

PREREQUISITE BEHAVIORAL OBJECTIVES

All of the following behavioral objectives are prerequisite objectives (the new term for what were previously "interim" objectives). There are no long-term behavioral objectives associated with this lesson because in later lessons students will learn more about all of the distinctions made in this lesson.

1. Students will write a definition of economics which includes the following parts: (1) it is a social science (2) it studies human behavior related to the scarcity problem--how to satisfy wants with scarce resources (3) the behavior studied are choices required because there are alternative uses of scarce resources.
2. Given the definition of economics stated below, students will be able to write an answer to the following questions about the definition. The definition is, "Economics is the social science which studies how people decide between alternative uses of scarce resources to satisfy wants."
   a. Why is economics a science? Ans: because it is a study of phenomena using the scientific method. Students should state the three parts of the procedure.
   b. Why is economics a social science? Ans: because economics is a study of human and group behavior. It studies one aspect of social organization.
   c. How does economics differ from sociology when sociology is defined as the study of society, the forms of groups within society and the interaction of these groups with one another? Ans: Economics is the study of economic decisions of economic institutions, whereas sociology is a broader study. It studies all groups of people, and all aspects of group activity.
   d. Of the four basic economic decisions (what, how, for whom, and how much), students can choose which would be eliminated if there were no alternative uses of resources, that is if each resource had only one use. Ans: What and how.
   e. From alternatives students can identify why economics involves a study of economic institutions. Ans: because these organizations make the major economic decisions.
   f. Students recognize that economics is more concerned with economic decisions than with economic activity.
   g. Given an example of social organization or a social problem, students identify which social sciences would study the organization or problem.
3. Given examples of human decisions such as the choice of a spouse, of religion, of an occupation, or of a political candidate, students can identify the economic aspect of the decision from a group of alternatives. For example, the economic aspect of choosing a spouse involves the inability to choose more than one spouse, the importance of his or her income earning or spending capacity, the level of wealth.

4. Given areas of micro and macro study in economics, students will label them correctly. For example:
   - a. How General Motors sets the price of new cars (micro)
   - b. How the Jones family spends its income (micro)
   - c. How raising personal income taxes will affect total consumer spending (macro)
   - d. How union organized collective bargaining will affect wages in the carpentry trade (micro)
   - c. The way in which union organized collective bargaining has affected inflation in the last thirty years (macro)
   - f. Comparing labor productivity increases in the steel and auto industries between 1930 and 1965 (micro)
5. Given examples of pure economic research and practical policy problems, students distinguish between the two. For example:
   - a. studying the organization of the steel industry (# and size of firms, what and how much each firm produces, etc.) pure
   - b. studying how much land should be devoted to state parks in California, policy
   - c. studying the need for additional legislation to further limit monopoly power of large firms, policy
   - d. study of the laws which regulate the electric power industry, pure

EXPERIENCE OBJECTIVES

1. Read a short essay on the interelation of economics and other social sciences and why these fields of study are considered scientific.
2. Complete a program which gives students practice using what they have learned about economics by requiring them to analyze examples.
3. Complete a questionnaire which asks for student opinions about various aspects of Unit I.
4. Participate in a class discussion on the meaning of economics and the purpose and effectiveness of Unit I in giving students this understanding.
5. Write a paragraph or short essay (not to exceed 200 words) discussing one of the following statements in the light of what the students now know about economics:
    a. Will studying economics help you balance the family checking account or stay within a budget?
    b. Are you learning how to make money in the stock market? or, Can you tell me what stocks to buy?
    c. Economics is not a science because economists cannot carry on experiements to test hypotheses about economic activity.
    d. Economists are all Socialists.

SUMMARY CHART - CONTENT AND OBJECTIVES

CONCEPT	ESSENTIAL MATERIAL	PREREQUISITE OBJECTIVES	EXPERIENCE OBJECTIVES	REASON FOR
Economics	Four parts: science social science behavior related to scarcity alternative uses of scarce resources	Define in writing and answer questions related to the four	Read essay and complete a program, class discussion	Summarize first six lessons, enable students to define economics in their own words, and to analyze someone else's definition
	Distinction between economics and other social sciences	Given a social problem or an example of social behavior, identifies which social science(s) is (are) involved	Same	To reinforce definition, and to give students a clearer idea of the subject matter of economics and to give background in the social sciences
	Distinction between micro and macro economics	Given examples of micro and macro study problems, identifies which is micro and which is macro	Same	To reinforce definition to review lessons 4 & 5 and to prepare for Units II and III
	Distinction between pure and applied economics	Given examples of pure and applied economics, identifies which is which	Same	To reinforce definition, to get students to see the difference between economics as a discipline and personal or practical behavior to review lesson 6 and prepare for critical analysis of economic policies in later units

LESSON SEQUENCE CHART

Note: Because this lesson is short and because most of the learning occurs through completing a program, the lesson sequence has been eliminated. The lesson sequence chart constains all of the instructions necessary to organize the lesson.

CONTENT	TEACHER	WORKSHEET	HOMEWORK	EVALUATION
Day 1				
Defining Economics	Administer program	Program on all major learning for the lesson	Complete attitude and interest questionnaire (use I.B.M. cards and pencils; card # 0000103	Criteria test from the program
Day 2				
Same	Answer question about Unit 1; encourage constructive criticism of the unit to get students to decide how much they have learned and whether or not they know or care about economics studies	—	Study for examination on Unit I using class discussion as a basis for review	—

ECON 12 - UNIT I

MULTIPLE CHOICE EXAMINATIONS AND ANSWERS

ECON 12 Examination on Lessons 1, 2, 3 -

Answer all of the questions below according to what you have learned in this course. There is only one correct answer for each question. If you think there is more than one correct answer, choose the one you think is best. If you think none are correct, choose the alternative which seems most likely. Answer all questions. To make sure you complete the examination, answer the questions quickly, and go back to check on items you are not sure about.

1. Economists distinguish between needs and wants. This distinction was made in lesson one by categorizing wants as:
   a) psychiatric and physiological
   b) mental and unsatisfied
   c) psychological and physical
   d) physical and scarce

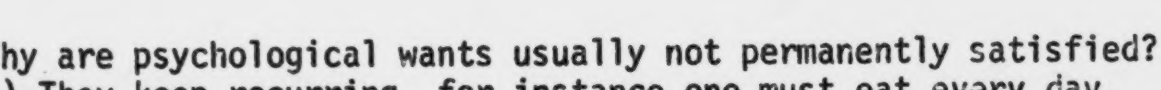
2. Which of the following is clearly an example of psychological wants?
   a) love
   b) food
   c) transportation
   d) a rifle for a pioneer

3. Which of the following is clearly an example of a physical want?
   a) love
   b) third car
   c) beach cottage
   d) clothing

4. Why are psychological wants usually not permanently satisfied?
   a) They keep recurring, for instance one must eat every day.
   b) As one is satisfied, desire for a new one is created.
   c) We use up the item that satisfied the want.
   d) People need different things at different times in their lives; for instance, a baby's diet is nearly all milk while older people have a more varied diet.

5. Which of the following is the best statement about why physical wants are not usually permanently satisfied?
   a) A few hours after eating, we get hungry.
   b) Clothes styles change continually.
   c) Most of us have ambition; when we reach one goal, we set ourselves another.
   d) Living standards in the U.S. keep going up.

6. In this diagram of the want satisfaction chain, which goes in square 4?
   a) wants b) production c) distribution d) consumption



7. In the above diagram which of the following goes in square 2?
   a) resources b) production c) outputs d) distribution

8. In the want-satisfaction chain inputs mean the same thing as:
   a) outputs
   b) goods and services
   c) factors of production
   d) capital

9. As defined in this course which of the following is inputs:
   a) carpenter's labor
   b) Ford car
   c) alarm clock
   d) dinner

10. As defined in this course, which of the following is both inputs and output?
   a) your Honda
   b) farm tractor
   c) a straw hat
   d) evergreen forest

11. As defined in this course which of the following is an output?
   a) doctor's prescription
   b) fish in the ocean
   c) driving a truck
   d) studying for this examination

For the following three questions indicate whether, with the information given, the thing is a scarce resource.

12. Sea water for a resident of Las Vegas: a) yes b) no c) can't tell

13. Sea water for a resident of San Francisco: a) yes b) no c) can't tell

14. Air conditioners for Alaskan Eskimoes: a) yes b) no c) can't tell

For each of the following questions (15,16,17) decide whether the example shows a way in which the scarcity problem might be solved.

15. A prospector discovers large deposits of titanium ore:
   a) yes b) no c) can't tell

16. Surplus coffee beans are dumped in the ocean:
   a) yes b) no c) can't tell

17. A young boy looses his craving for sweets:
   a) yes b) no c) can't tell

18. Productivity ratio. A factory uses 2 tons of steel, 12 man-hours, and 4 machine hours to produce 56 filing cabinets. What is the productivity ratio for steel?

a) 28 cabinets/ton b) 36 cabinets/ton c) 14 cabinets/hr.
d) 4 2/3 cabinets.

The next four questions involve comparing the efficiency (productivity) of two companies.

Company A and Company B both make widgets. Company A has a modern factory with all the latest machinery and 60 percent of its employees are women. Company B has an older building, does more work by hand and only 10 percent of its employees are women. Other data:

	Company A	Company B
Output	widgets per week 6000	2000 widgets per week
Inputs materials	2 tons plastic at $450 per ton 200 hours at $10 per hour	1000 lbs. metal at $35 per 100 lbs. 40 hours at $9 per hour
machine time		
labor	400 man-hrs. at $2.50 per man/hr.	200 man-hours at $3 per man-hour
building	$600 per week	$190 per week

19. What is the machine productivity for Company A?
a) $2000 b) 600 widgets/$1 c) $10/hour d) 30 widgets/hour

20. What is the labor productivity for Company B?
a) 10 widgets/man-hour b) 3 1/3 widgets/$1 c) both a and b
d) neither a nor b.

21. Which company is the more efficient?
a) A b) B c) same d) neither

22. What is the total productivity of Company B?
a) $1.33/widget b) 1.33 widgets/$1 c) 75¢ widget d) .75 widgets/$1

The next three questions give examples of specialization. Indicate whether they show: a) resource specialization b) division of labor c) use of capital d) combination of a,b, and/or c.

23. A factor installs a new assembly line system which uses computers and computer technicians.

23. A doctor confines his practice to the treatment of children.

24. A worker fastens on heels in a shoe factory.

Alternative Costs and Comparative Advantage

Secretary	Output/minutes (words)	
	Typing	Shorthand
A	60	80
B	50	100

26. What is the relative efficiency of secretary A as compared to B in typing?
a) 1.2 b) .83 c) .6 d) none of these

27. What is the alternative cost of using A as a typist?
a) 80 words shorthand b) 100 words shorthand
c) 60 words typing d) none of these

28. To get maximum output, A should work full time at:
a) typing b) shorthand c) either one

29. As a typist A has
a) comparative advantage
b) absolute advantage
c) neither
d) both

30. As a typist B has
a) comparative advantage
b) absolute advantage
c) neither
d) both

31. Which of the following is the best description of diminishing returns?
    a) When one input in a production process is fixed, only a fixed amount of output can be produced per day.

    b) To increase output from a production process, it is necessary to increase all inputs proportionately.

    c) Additions to output are less for each additional unit of one given input.

    d) After diminishing returns set in, output declines for each additional unit of one given input.

32. The following table shows the output which can be produced from a shirt factory using different amounts of workers. When does diminishing returns set in in this example:

labor input (man-hours per day)	output # shirts per day
0	0
10	100
20	250
30	375
40	475
50	550
60	550
70	540

    a) When labor input increases from 20-30 man-hours,
    b) When labor input increases from 30-40,
    c) When labor input increases from 40-50,
    d) When labor input increases from 60-70 man-hours.

33. Why are there diminishing returns in the example above?
    a) because labor is scarce
    b) because some other input in the production of shirts is scarce
    c) because some workers are better than others
    d) because of all of these factors

34. Alternative cost is:
    a) the cost of producing some good or service by an alternative method
    b) the output that could have been produced if an input had been put to another use
    c) the cost of a output if figured in the money of another country
    d) the cost of producing an output figured in cost per man-hour.

35. A company produces 1000 units per week of its product for an input of 1000 man-hours. It adds 200 man-hours per week and production rises to 1150 units per week. This is an example of:
    a) increased productivity
    b) diminishing returns
    c) absolute advantage
    d) specialization

36. Which of the following is the most complete definition of exchange as used in this lesson?
    a) the outcome of specialization
    b) the trading of goods for money
    c) transporting assets from one place to another
    d) the trading of one asset for another

37. Which of the following is the most exact explanation of why exchange takes place:
    a) It is a necessary consequence of specialization of production
    b) people have more money to spend these days
    c) exchange satisfies wants
    d) an individual cannot produce all the things he needs

38. Which of the following is false?
    a) metal money is more useful than paper money
    b) money helped to make exchange more efficient
    c) the increased efficiency of money exchange
    d) money has developed into more and more efficient forms with the growth of specialization

For each of the following three questions, decide whether the statement primarily describes
a) a function of money
b) a quality of money
c) neither

39. For an Indian tribe living by the sea, pebbles on the beach would not be a satisfactory form of money.

40. Among early traders in the U.S., values of all commodities were reckoned in terms of beaver skins.

41. By using grain as a commodity money, socieities were able to store wealth.

42. For an Indian tribe, pebbles on the beach would not be a satisfactory form of money because:
    a) they are not easily stored or transported
    b) they are not scarce
    c) they are not durable
    d) they are not legal tender

43. In the U.S. today gold is not money because:
    a) it is illegal to mine new gold
    b) gold is not a store of value
    c) gold coins are not a medium of exchange
    d) gold does not serve any of the functions of money

44. Which of the following assets are most liquid?
    a) an apartment house
    b) your checking account
    c) a government bond
    d) money

45. Which of the following most clearly represents income?
    a) wages paid for a month's work
    b) a new car
    c) the money in your saving account
    d) the money you receive from selling your bicycle

46. Which of the following is considered an asset by the person or organization mentioned in the example:
    a) the mortgage on your family's house from your father's point of view
    b) the car you own outright
    c) your father's checking deposit from the bank's point of view
    d) the rent a family pays for living in an apartment

47. Which of the following types of financial institutions lend money to families by issuing credit cards?
    a) commercial banks
    b) credit unions
    c) investment banks
    d) finance companies

48. Which of the following examples of investment is "real" investment.
    a) purchase of a new tractor by a farmer
    b) purchase of a government bond
    c) purchase of a farm
    d) purchase by a family of a new T-V set

49. Which of the following represents real capital
    a) money
    b) corporation stocks and bonds
    c) factories
    d) virgin forrest

50. Which of the following forms of credit is the closest substitute for money in the U.S. today?
  a) demand or checking deposits
  b) credit cards
  c) short-term bank loans
  d) department store checking accounts

51. Which of the functions of money are not fulfilled by credit cards?
  a) money is a store of value
  b) money is a unit of account
  c) money is legal
  d) credit cards do not serve any of the above functions of money

Answers to Examination on Lessons 1, 2, 3

Enclosed is a copy of an examination testing achievement of the long-run behavioral objectives for lesson 1, 2, 3. When you have completed the lessons, give the examination, using the I.B.M. cards for examination #1 supplied to you.

Please do not alter the examination in any way, and ask students to work through the examination quickly, to make sure to answer all questions.

There is only one correct answer to each question. Student should choose the answer which seems most correct according to what has been learned in this course.

Collect the I.B.M. cards and give them to the supervisor as soon as possible after the test is given in class. You may not receive the grades on this exam for a month or so. If you need grades for school record keeping, make arrangements to grade the examinations youself before you give the I.B.M. cards to the supervisor.

Below are listed the answers to the questions and the behavioral objectives tested by the item:

Question No.	Answer	Lesson No.	Behavioral Object.No.
1	C	1	long-run 1
2	A	1	long-run 1
3	D	1	long-run 1
4	B	1	long-run 2
5	A	1	long-run 2
6	C	1	long-run 3
7	B	1	long-run 3
8	C	1	long-run 3
9	A	1	long-run 3
10	B	1	long-run 3
11	A	1	long-run 3
12	C	1	long-run 4
13	B	1	long-run 4
14	B	1	long-run 4
15	A	1	long-run 5

Question No.	Answer	Lesson No.	Behavioral Object. No.
16	B	1	long-run 5
17	A	1	long-run 5
18	A	2	long-run 1
19	D	2	long-run 1
20	C	2	long-run 1
21	C	2	long-run 2
22	C	2	long-run 2
23	D	2	long-run 3
24	A	2	long-run 3
25	B	2	long-run 3
26	A	2	long-run 4
27	A	2	long-run 4
28	A	2	long-run 4
29	B	2	long-run 5
30	C	2	long-run 5
31	C	2	long-run 7
32	A	2	long-run 7
33	B	2	long-run 7
34	B	2	long-run 6
35	B	2	long-run 7
36	D	3	long-run 1
37	A	3	long-run 2
38	A	3	long-run 3
39	B	3	long-run 4 & 5
40	A	3	long-run 4 & 5
41	A	3	long-run 4 & 5
42	B	3	long-run 5
43	C	3	long-run 4

Question No.	Answer	Lesson No.	Behavioral Object. No.
44	D	3	long-run 7
45	A	3	long-run 6
46	B	3	long-run 6
47	A	3	long-run 8
48	A	3	long-run 8
49	C	3	long-run 9
50	B	3	long-run 10
51	D	3	long-run 10

Econ 12 - Test on Unit I, Lessons 4&5

Instructions: Answer questions on the I.B.M. card provided by your instructor and be sure to use the I.B.M. pencil. Answer every question, and for each question mark the alternative which represents the best answer. There is only one correct answer for each question.

1. Every economy has all but one of the following attributes:
    a. economic activities, five
    b. allocation decisions, five
    c. economic institutions to organize economic activity
    d. social forces, three

2. Which of the following is not one of the basic economic activities:
    a. saving
    b. planning
    c. exchanging
    d. consuming

3. One or more of the following statements is false.
    (1) The five basic economic activities are saving, planning, exchanging, consuming, investing.
    (2) The five allocation decisions are what, why, how, how much, to whom.
    (3) The three basic social forces are tradition, command and the market.
    (4) Economic institutions organize economic activities.
    a. one of the statements is false
    b. two of the statements are false
    c. three of the statements are false
    d. four of the statements are false

4. All the economic activities are considered economizing because they all:
    a. are subject to economic analysis
    b. are subject to the test of efficiency
    c. involve choices about how to allocate scarce resources to satisfy wants
    d. none of the above

5. Every economic institution has all but one of the following attributes in common:
    a. it organizes human activity
    b. it is only concerned with making economic decisions
    c. it functions to economize scarce resources
    d. it functions to help solve the scarcity problem

6. An economic system is:
    a. a set of production institutions
    b. that part of the political system concerned with economic problems
    c. all the economic institutions in a society and the exchange relations between them
    d. none of the above

7. **All but one of the following is a necessary step in studying an economic system:**
   - **a. identify major economic institutions**
   - **b. describe decision making process of each institution**
   - **c. describe political system**
   - **d. describe forms of exchange between the economic institutions**

8. **The market is so important in our lives because of all but one of the following:**
   - **a. the government controls so much of the economy**
   - **b. we purchase most of the things which satisfy our wants in the market**
   - **c. many important allocation decisions are made through buying and selling**
   - **d. we sell our services in the market**

9. **All but one of the following statements about economic decisions is true:**
   - **a. they are all necessary because of scarcity**
   - **b. they all are designed to help satisfy wants**
   - **c. they all are concerned with allocation of scarce resources**
   - **d. they are all measurable with an efficiency ratio**

10. **When all Chevrolet models have names beginning with C, it most likely shows that this decision is primarily a result of:**
    - **a. command by the President of General Motors**
    - **b. market appeal**
    - **c. company tradition**
    - **d. government demand**

11. **When the U.S. Office of Education requires non-communist oath from a student who borrows money for college, it is an example of a decision resulting primarily from:**
    - **a. market demand by students borrowers**
    - **b. command by parents of student borrowers**
    - **c. political command of the congress**
    - **d. tradition of the United States stretching back to the 18th century**

12. **All but one of the following is an economic activity:**
    - **a. breathing**
    - **b. eating**
    - **c. driving**
    - **d. working**

13. **One of the following is primarily an economic activity:**
    - **a. sunbathing**
    - **b. taking a nap**
    - **c. driving to school**
    - **d. giving a party for friends**

14. The correct answer in the question above is an example of all but one of the following:
    a. investment
    b. exchange
    c. consumption
    d. production

15. One of the following is primarily an economic institution:
    a. hot rod club
    b. Sinatra fan club
    c. Sunday school
    d. secretarial school

16. Saving is an economizing activity because:
    a. we receive moral satisfactions when we save
    b. we aren't consuming anything when we save
    c. we are increasing our long-run satisfaction by postponing consumption
    d. we are substituting saving for investment

17. Investment among the Tsimshian is best represented by:
    a. making ceremonial rattles
    b. canoe building
    c. potlatching
    d. weaving hats

18. The fact that saving in Tsimshian society is usually indistinguishable from investment explains why, in the Tsimshian society:
    a. there is no saving
    b. there is no stock or bond market
    c. there is no private property
    d. there is no great reliance on horses

19. Which of the following is clearly an example in the Tsimshian economy for which savings is distinct from investment?
    a. local clan group catch candlefish and store grease
    b. local clan group builds a new house
    c. a member of the local clan group makes a totem pole
    d. chief pays canoe maker for a new canoe with candlefish oil

20. Both the Tsimshian and U.S. societies make extensive use of all but one of the following:
    a. production institutions
    b. markets
    c. specialization of production
    d. dress according to taste and custom

21. In comparing the U.S. and Tsimshian societies, only the U.S. has:
    - a. extensive use of money
    - b. command decisions
    - c. round about production
    - d. production decisions made by tradition

22. Which of the following is a way in which the U.S. is similar to Tsimshian society?
    - a. money is used widely as a medium of exchange
    - b. the market system is highly developed
    - c. family units are economically self sufficient
    - d. many economic decisions are made by command

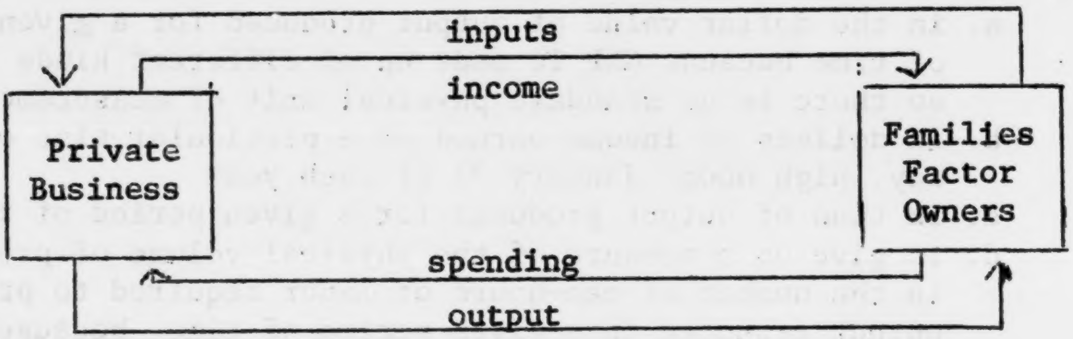
23. What is the reason economists are interested in studying exchanges between different groups in a society?
    - a. they are interested in studying family ties
    - b. they are interested in studying the need for government
    - c. the exchanges show the dependence of one group on another in solving the scarcity problem

24. Which of the following was an important example of exchange in the Tsimshian economy?
    - a. purchase of salmon
    - b. trading children for scarce goods
    - c. hoarding sea shells and trading them for pebbles
    - d. gift giving at ceremonies

25. Which of the following organizations sell (supply) goods or services in a factor market?
    - a. a department store
    - b. the U.S. Navy
    - c. a labor union
    - d. a hospital

26. Which of the following is the most general definition of a product market?
    - a. a market in which goods and services are sold to wholesalers, retailers, or to members of households to satisfy their wants
    - b. a market in which workers sell their labor services
    - c. a place where many different things are sold in an outside market place
    - d. an auction where used goods and services are sold to the highest bidder

27. Which of the following economies can be described by a circular flow diagram labeled and drawn in the way below:



a. a pioneer village in the U.S. west in which each family provides all of its own needs
b. Mexico today which uses a different currency from the U.S. currency, and which has privately owned industry
c. a socialist economy which uses money for exchange, but where all factories are owned and operated by the government
d. all of the above are described by the diagram

28. Which of the following economic institutions of the U.S. economy is not shown in the circular flow diagram used to describe the U.S.?
a. banks
b. stock market
c. the post office
d. none of the above are shown

29. Which of the following types of exchanges which occur in the U.S. are not shown in the circular flow diagram
a. government sells bonds to private citizens
b. a business sells its output to a wholesale distributer
c. a business buys lumber to make houses
d. a family buys a new car

30. From the following list of main features of the U.S. economy, choose the one which is not shown in the circular flow diagram:
a. specialization has created separate production and consumption institutions
b. the great demands for purchasing power have created specialized forms of credit like credit cards
c. exchanges are money exchanges
d. there are two main types of exchanges between firms and families

31. According to the circular flow model (movie) shown in class, GNP = National Income for any given month. Why?
a. families pay out all income earned to buy goods and services produced by firms
b. the firms pay out all revenue from sales of output for new inputs
c. income earned and output produced for a given month are both generated by the same thing - the production activity of that month
d. all of the reasons taken together explain why GNP = National Income

32. GNP is most often measured:
   a. in the dollar value of output produced for a given period of time because GNP is made up of different kinds of output so there is no standard physical unit of measurement
   b. in dollars of income earned at a particular time of day, say, high noon, January 31 of each year
   c. in tons of output produced for a given period of time,
   d. to give us a measure of the physical volume of production; in the number of man-hours of labor required to produce the total output produced in a given period of time, because labor is the most standard input

33. Which of the following economic activities is not shown in the circular flow diagram of the U.S. economy?
   a. production
   b. consumption
   c. exchange
   d. saving

34. The circular flow model (movie) shows a simplified economy operating at a constant rate of output - $280 per month in January. In order for an economy to produce at the same rate of output what would have to be true?
   a. there is no money exchange in the economy
   b. factories are privately owned
   c. the number and size of firms and families must stay the same
   d. there can be no consumption spending in the economy

35. The circular flow model (movie) is useful in studying the U.S. economy because:
   a. it shows that the economy is in continuous, circular operation
   b. it explains how firms decide what inputs to buy
   c. it explains how each family decides what goods and services to buy
   d. it explains how fast the economy will grow from year to year

36. Which of the following statements correctly explains why the circular flow diagram is called a circular flow diagram?
   a. the diagram (or movie) shows the constant circulation of assets from one family to another as people exchange one form of wealth for another
   b. the diagram shows a cycle of exchanges of inputs and outputs between firms and families which produce a constant flow of money income and real goods and services
   c. the diagram shows round-about production, that is, the dependence of businesses on each other for the supply of materials, capital equipment and the construction of buildings and roads
   d. the diagram is a circular flow diagram for all of these reasons

37. It is important to study the U.S. economy as a total economy
    - a. to learn the way it operates, and how well it operates, to satisfy the wants of all Americans
    - b. to study the factors which promote growth in per capita income and in GNP from one year to the next
    - c. to learn how to control inflation and unemployment for all citizens in the U.S.
    - d. for all of the reasons cited above

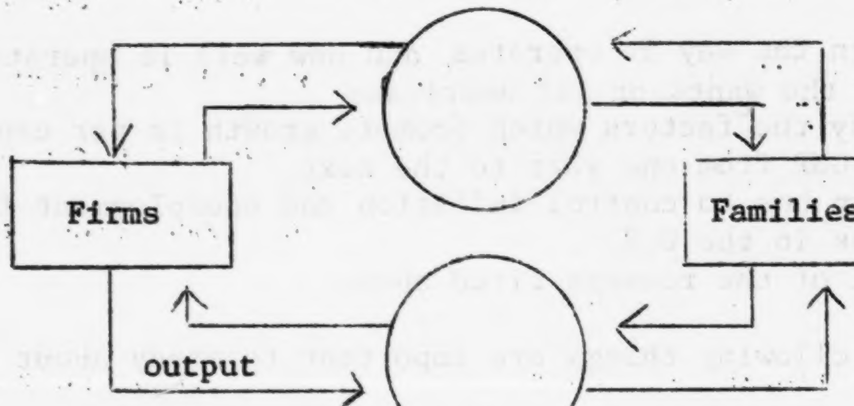
38. Which of the following things are important to study about the total economy?
    - a. what is the level of total production (output) of the economy for a period of time?
    - b. how many resources exist and how much of them are being exployed?
    - c. both of the above
    - d. neither a or b

39. Macro economics is:
    - a. the study of how families, businesses, and government agencies make economic decisions
    - b. the operation of the total economy
    - c. both of the above
    - d. neither a or b

40. Which of the following important features of the U.S. economy is shown in the circular flow model (movie)
    - a. the economy is in operation all the time, production and consumption never stop
    - b. the importance of investment in capital goods to increase productivity of factories
    - c. the fact that families usually save some of their income
    - d. the importance of government regulation of economic activity

41. Which of the following important features of both the U.S. and Russian economies is shown in both the circular flow diagram and movie model?
    - a. families consume output and firms produce output
    - b. there are money exchanges between families and firms
    - c. both of the above are shown and true for both economies
    - d. neither is true for both economies

Answer the next five questions, using the circular flow diagram below:



42. The upper circle represents:
    a. exchange of inputs for income
    b. product market exchanges
    c. borrowing money
    d. production

43. The inside arrows represent:
    a. the circular flow of real goods and services from families to firms to families, etc.
    b. the circulation of money in the economy
    c. specialization of production
    d. the flow of inputs and outputs in the economy for the U.S.

44. The upper outside arrows represent:
    a. consumer spending
    b. flow of services of land, labor, and capital to firms
    c. income in the form of wages and salaries, profits, rent and interest
    d. exchange which occurs in product markets

45. If the diagram were a description of the Russian economy, the upper, inside arrows would show:
    a. the flow of revenue to stores and factories
    b. payments of rent, interest, wages and salaries
    c. wage and salary payments
    d. non money income payments

46. If the diagram were a description of the Russian Economy what functions would families serve in the economy?
    a. they would own all factors of production
    b. they would be the major production institutions in the economy
    c. they would provide the labor for production
    d. all of the above would be correct for Russia

CCC Dept. of Education
SW:mr 150c 4/7/66

Examination Answers on Lessons 4 and 5

After you complete lessons 4 and 5 please give examination No. 2 on these two lessons. A copy of the exam is enclosed. (1) Use I.B.M. answer cards marked 0000102 in the upper right corner of the card. (2) If you give the exam before April 16, please bring the answer cards to the meeting. Otherwise, send them to Roy Andreen as soon as you have given the exam. (3) If you do not care to use the exam results as a grade, this is your option. If you do want to record the grade, we suggest that you score and grade the cards before you hand them over to us. (4) For questions with which your students have trouble, be sure to review the relevant content so that misunderstandings are cleared up. (5) Make a note of what seem to be bad questions. They may be bad or they may require difficult but legitimate discriminations. (6) The following table shows the answer to each question and the behavioral objective tested by the question.

Question No.	Answer	Lesson No.	Behavioral Objective
1	A	4	L.T. 1
2	B	4	L.T. 1
3	B	4	L.T. 1
4	C	4	L.T. 2
5	B	4	L.T. 4
6	C	4	L.T. 6
7	C	4	L.T. 8
8	A	4	L.T. 9
9	D	4	L.T. 3
10	C	4	L.T. 5
11	C	4	L.T. 5
12	A	4	I.1
13	C	4	I. 1
14	B	4	I. 2
15	D	4	I. 3
16	C	4	I. 4
17	B	4	I. 5
18	B	4	I. 6
19	D	4	I. 6
20	B	4	I. 7

Question	Answer	Lesson No.	Behavioral Objective
21	A	4	I. 7
22	D	4	I. 8
23	C	4	L.T. 7
24	D	4	I. 9
25	C	5	L.T. 1
26	A	5	L.T. 2
27	B	5	L.T. 3
28	D	5	L.T. 4
29	A	5	L.T. 4
30	B	5	L.T. 5
31	D	5	L.T. 6
32	A	5	L.T. 7
33	D	5	L.T. 4
34	C	5	I. 4
35	A	5	I. 5
36	B	5	I. 6
37	D	5	I. 7
38	C	5	I. 8
39	B	5	I. 9
40	A	5	L.T. 5
41	C	5	L.T. 5
42	A	5	I. 1
43	B	5	I. 1
44	B	5	I. 1
45	C	5	I. 3
46	C	5	I. 3

APRIL 15, 1966
ECON 12
UNIT EXAMINATION QUESTIONS
LESSON NO. 1 THROUGH LESSON NO. 7

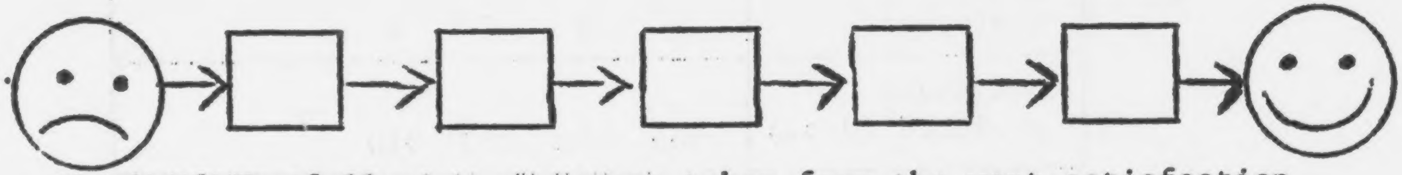
INSTRUCTIONS TO STUDENTS: Please answer all of the following questions. There is only one correct answer for a given question. If you are not sure which of two alternatives is correct, choose the answer you think is best.

LESSON NO. 1

1. As discussed in class, all wants are either
   a. physical or physiological
   b. mental or psychological
   c. physical or psychological
   d. none of the above

   All but one of the following statements about wants is true.
   a. All wants are either physical or psychological or a combination of both.
   b. Most wants are partly psychological.
   c. All physical wants are recurring wants.
   d. Most psychological wants are never permanently satisfied.

2.



   Which of the following sequences taken from the want-satisfaction chain is incorrect?

   a. production, output, distribution
   b. distribution, consumption, satisfaction
   c. wants, inputs, production
   d. none of the above

3. The categories of land, labor and capital belong under the following term in the want satisfaction chain.

   a. wants
   b. inputs
   c. production
   d. outputs

4. All but one of the following statements about resources is true.

   a. resources are either scarce or not scarce.
   b. if there is a large amount of a resource it is not scarce.
   c. all scarce resources have value.
   d. a resource is scarce if there is less of it than needed to satisfy wants.

5. Which of the following is not one of the primary ways societies have used to solve the scarcity problem?
   a. produce more from present resources
   b. reduce the quality of outputs so that people will consume less
   c. increase the amount of resources
   d. redistribute what is produced

LESSON NO. 2

6.

a.

BAKERY A					
Number of Employees	2	3	4	5	6
Loaves produced	800	1200	1600	1950	2100

b.

BAKERY B				
Number of Employees	5	6	7	8
Doughnuts produced (doz.)	500	600	750	910

c.

BAKERY C					
Number of Employees	4	5	6	7	8
Weekly receipts	$1000	$1250	$1500	$1750	$2000

Which, if any, is an example of diminishing returns?

(a) A (b) B (c) C (d) None

7. For the following example choose which type of specialization is involved.

   A school system builds a new high school building which has classrooms which can be altered in shape and size. This makes team teaching and specialized instruction possible.
   a. resource specialization
   b. division of labor
   c. use of capital
   d. combination of above

8. Alternative cost is defined as:
   a. the cost of producing alternatives
   b. total cost of producing an output alternates with level of output
   c. the cost of producing some given output is the value of other outputs which could have been produced with the same inputs.
   d. the cost per unit of producing the good or service.

9. If three men make 24 installations of an air conditioning unit in one eight-hour day, then their labor productivity is expressed as:
   a. 6 installations/ day
   b. 24 installations/ 3 day
   c. 1 installation/ man hour
   d. none of the above

LESSON NO. 3

10. An example of barter is:
    a. giving a present to a favorite aunt
    b. exchanging money for a U.S. Savings Bond
    c. mowing a lawn in exchange for a meal
    d. when the judge gives you the choice of a $1000 fine or 30 days in jail

11. One of the following statements is false.
    a. Specialization requires exchange.
    b. The use of money increased theefficiency of exchange
    c. The use of money exchange lessened the need for production specialization.
    d. Money is an example of specialization to serve the needs of exchange.

12. Which of the following qualities must money have in order to function as a unit of acount?
    a. It must be durable or easily replaceable.
    b. It must be convenient to carry.
    c. There must be a standard way of measuring it, e.g., dollars.
    d. None of the above.

13. Which of the following is the most liquid asset?
    a. a bag of apples
    b. 50 Blue Chip trading stamps
    c. a ten dollar bill
    d. a 1965 automobile

14. Of the following, which is an example of real capital?
    a. a $1 million loan
    b. a laundry's shirt ironer
    c. a $1000 bond
    d. a $10 bill

LESSON NO. 4

15. The five basic economic activities have in common all but one of the following.
    a. they are economizing activities
    b. they involve economic decisions
    c. they all involve two or more people
    d. they involve conserving scarce resources to satisfy wants

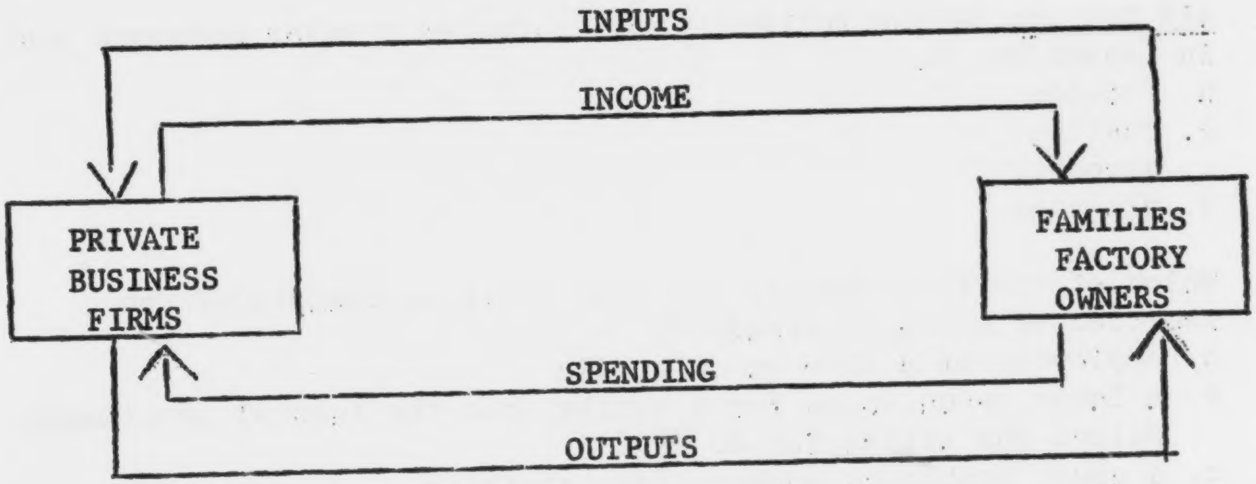
16. The four economic decisions have in common all but one of the following.
    a. they are influenced by the forces of tradition, command and/or the market
    b. in the U.S. all decisions are market decisions
    c. they involve allocation of scarce resources
    d. they are made by individuals and institutions

17. An economic institution has all but one of the following characteristics.
    a. it is influenced by tradition, command and/or the market
    b. it carries out one or more of the five basic economic activities
    c. it makes one or more of the four basic economic decisions
    d. its actions and decisions are independent of other institutions

18. All but one of the following is true of an economic system.
    a. it is composed of all the economic institutions in a society
    b. the institutions composing it are related through exchange activities
    c. government is outside the economic system but has a powerful influence on it
    d. its primary function is to provide goods and services for consumption

19. Which of the following social forces has the greatest importance in determing the standard of living of the majority of American families?
    a. tradition
    b. command
    c. market
    d. state government

LESSON NO. 5



20. Which of the following characteristics of the U.S. economy is shown on the above circular flow diagram?
    - a. the high rate of economic growth
    - b. the organization of the American family
    - c. the large economic role of the government
    - d. the exchange relationship between firms and families

21. All but one of the following assumptions is necessary in constructing a circular flow model that operates at a constant rate.
    - a. there is no investment
    - b. output produced per day is constant
    - c. population is stable
    - d. there is no government

22. The above diagram is called a circular flow diagram for all but one of the following reasons.
    - a. it shows the cycle which keeps the economy in constant operation
    - b. it shows that the money flows from earning income and spending are continuous
    - c. it shows the flows of factor inputs being transformed into outputs which flow to families and generate new factor inputs
    - d. it shows how business firms transform inputs into outputs

23. Macro-economics is the study of:
    - a. macaroni factories
    - b. how the total economic system functions
    - c. how exchanges are made in markets
    - d. individual firms or labor unions

24. All but one of the following is a characteristic of the U.S. economy indicated in the above circular flow diagram.
    - a. specialization has created separate production and consumption units.
    - b. there are equal and opposite flows of money
    - c. all exchanges of inputs for outputs are direct barter exchanges of factors for goods and services
    - d. total income equals total output for the economy for some given period of time.

LESSON NO. 6

25. All but one of the following was listed as a major economic goal in Lesson No. 6.
    a. freedom
    b. justice
    c. serenity
    d. progress

26. Which of the following is the most striking example of the exercise of economic freedom?
    a. employees of a firm go on strike
    b. a labor union votes for a strike, but the federal government delays the strike for 80 days
    c. a court prohibits workers from striking
    d. the government orders a union and company to accept a solution to a disagreement over wages made by a neutral arbitrator

27. All but one of the following things is an indication of economic progress.
    a. labor productivity rises by 20% in five years
    b. G.N.P. grows 6.7% in one year
    c. Los Angeles has 7% more smog in 1965 than in 1964
    d. Teflon-coated ovens are introduced in the home appliance market

28. The examples of change in economic activity given in the above question have the following thing in common.
    a. they are all examples of progress
    b. they all indicate an increase in economic justice as well as freedom
    c. they are all subject to quantitative measurement
    d. they all show how progress causes a decline in economic freedom

29. One of the following policies is incorrectly categorized as to the goal it promotes.
    a. social security laws to provide old age benefits -security
    b. minimum wage laws requiring businesses to pay workers at least $1.25/hr. -freedom
    c. urban renewal programs to clear slums -progress
    d. full employment -justice

30. A municipal government invests $40 million in an automated freight loading and unloading equipment in a sea port and eliminates 20% of the longshore jobs in the port. One of the following statements concerning such a policy is false.
    a. automation speeds progress
    b. automation usually leads to greater economic justice
    c. automation can be introduced so that employees' economic security is maintained
    d. when an employer can introduce automated techniques without consulting his employees it is an exercise of his economic freedom

31. The economic policy, described in question #30 is a good example of a policy that promotes progress but might also impede justice and security. Which of the following policies also promots progress and impedes justice or security?
    a. reduction of tariff rates on imported textiles
    b. removal of price supports on wheat
    c. removal of firemen from the cabs of Diesel train engines
    d. all of the above

32. All but one of the following statements concerning the relationship between social values, economic goals and economic institutions is correct.
    a. economic goals shape economic institutions, but economic institutions do not shape economic goals
    b. social values determine economic goals
    c. the economic goals of freedom, justice, progress and security are also statements of social values in the U.S.
    d. economic institutions aid in achieving our economic goals

33. Which of the following statements about the nature of economic conflict is true?
    a. there is always an ethically correct side of a conflict
    b. conflict is an inevitable outcome of scarcity
    c. economic and political conflict are always separate from each other
    d. in the United States our love of justice prevents conflict

34. Conflicts in the U.S. are:
    a. resolved by the courts according to what is ethically right
    b. are very largely resolved by market competition
    c. almost entirely concerned with labor management relations
    d. all a result of the profit motive

35. Economic policies are all but one of the following
    a. theoretical statements about the nature of economic society
    b. they deal with the practical economic problems of individuals, families, firms and governments
    c. they are plans of action designed to help achieve given economic goals
    d. the process of making policies often requires the use of economic theory and techniques of analysis to the practical problem

36. Which of the following is not a step in making a rational decision on a matter of economic policy?
    a. state the goal you wish to achieve
    b. choose the policy which is advocated by the majority of those people interested in the issue
    c. determine that the goal you seek is consistent with your other goals
    d. list the things which limit the policy choices available to you

LESSON NO. 7

37. Which of the following is not a part of the definition of economics?
    a. economics is a science
    b. economics studies human thought
    c. economics studies the relationship between scarce means and ends
    d. economics studies the process of choosing alternatives

38. Economics is a science that has all but one of the following characteristics.
    a. it studies natural phenomena
    b. it follows the scientific method
    c. it gathers empirical data
    d. it uses testable theoretical concepts

39. Economics is a social science which is distinguishable from other social sciences by the fact that
    a. it is the study of the alternative uses of power
    b. it studies the interaction of social groups
    c. it studies how social groups make decisions to allocate scarce resources
    d. none of the above

40. Which of the following topics would mainly be the subject of sociology?
    a. marriage dances among the Northwest Indians
    b. the Constitutional relations between President Johnson and the United States Congress
    c. the relationships between youth groups and adult groups in city poverty areas
    d. the relationships between textile industry employees and employers in poverty areas

41. Which of the above topics is mainly the subject of anthropology?
    a.
    b.
    c.
    d.

42. Which of the above topics is mainly the subject of political science?
    a.
    b.
    c.
    d.

43. Which of the four basic economic decisions (what, how, for whom, and how much) would be eliminated if there were no alternative uses for a particular scarce resource?
    a. what and how
    b. what and for whom
    c. how and how much
    d. for whom and how much

44. Economics involves a study of institutions for all but one of the following reasons: because they
    a. organize economic activity
    b. make major economic decisions
    c. are good examples of the way people organize into groups
    d. are important in shaping our social values and economic goals

45. Which of the following topics is more important in the study of economics?
    a. production processes in industry
    b. exchange activities between firms
    c. consumption patterns of families
    d. how decisions are made to allocate scarce resources

46. All but one of the following constitute an economic aspect of having a large family Christmas dinner
    a. it is necessary to decide on the menu
    b. there is an exchange of assets, for example, food and various gifts
    c. it is necessary to decide how to avoid arguing with your uncle
    d. it is necessary to produce the dinner

47. Economics has two main areas of study.
    a. science and society
    b. exchange and investment
    c. anthropology and sociology
    d. micro and macro-economics

48. Which of the following is an example of macro economics?
    a. how the Jones family spends its income
    b. how consumers will react to a new type of advertising of Ford Motor Company
    c. how raising personal income taxes will affect total consumer spending
    d. how teenage credit affects the number of used cars purchased in San Francisco

49. When economists deal with increasing our knowledge of the U. S. economy, it is called
    a. pure economic research
    b. macro economics
    c. micro economics
    d. practical research for making economic policy

50. Which of the following is an example of applied economic research?
    a. studying the organization of the steel industry
    b. studying the reasons businesses invest in a new buildings and equipment program
    c. studying how industrial investment affects the level of G.N.P.
    d. studying how the federal government should use its taxing program to promote full employment

UNIT EXAMINATION

Unit I - Econ 12

No.	Answer	Lesson	Objective No.
1	C	1	1-2
2	A	1	3
3	B	1	3
4	B	1	4
5	B	1	5
6	A	2	7
7	D	2	7
8	C	2	6
9	C	2	1-2
10	C	3	1
11	C	3	3
12	C	3	5
13	C	3	7
14	B	3	9
15	C	4	2
16	B	4	3
17	D	4	4
18	C	4	6
19	C	4	9
20	D	5	2
21	D	5	4
22	D	5	6
23	B	5	9
24	C	5	5
25	C	6	L 1
26	A	6	L 1
27	C	6	L 1
28	C	6	L 2
29	B	6	Pr 1
30	B	6	Pr 2
31	D	6	Pr 2
32	A	6	Pr 3
33	B	6	Pr 4
34	B	6	Pr 4
35	A	6	Pr 5
36	B	6	Pr 6
37	B	7	Pr 1
38	A	7	Pr 2a
39	C	7	Pr 2b
40	C	7	Pr 2c & g
41	A	7	Pr 2c & g
42	B	7	Pr 2c & g
43	A	7	Pr 2d
44	C	7	Pr 2e
45	D	7	Pr 2f
46	C	7	Pr 3
47	D	7	Pr 4
48	C	7	Pr 4
49	A	7	Pr 5
50	D	7	Pr 5

INTRODUCTION TO UNIT II

Purpose of This Unit

A. This unit is a careful study of how the U.S. Price System works to allocate scarce resources among alternative uses to satisfy human wants, and how well it works.

B. Lessons in the Unit. Below is a list of lessons in the units, the number of days lessons should take and a list of materials.

1. Lesson 1 - Definition and function of Price System, 2 days, student readings.
2. Lesson 2 - Models in the Social Sciences, 2 days, movie, program.
3. Lesson 3 - Market supply and demand, 5 days, overhead transparancies, readings(this is an essay on price theory which covers the material in lessons 3-6), worksheet (this worksheet covers lessons 3-6).
4. Lesson 4 - Price determination and the laws of supply and demand, 4 days, see above, overhead transparancies.
5. Lesson 5 - Model of Perfect Competition, 2 days.
6. Lesson 6 - Model of Pure Monopoly, 2 days.
7. Lesson 7 - Introduction to the study of Industry Organization, 2 days, program.
8. Lesson 8 - Three case studies, 2 weeks, overhead transparancies on the aluminum industry, movie, readings, teacher essays, student problems, program on public utility regulation.
9. Lesson 9 - Public Control of industry, 3 days, readings.

C. General Description of the lessons.

1. A study of how the price of a product is determined in a market, and of how price changes affect resource allocation.

   a. Lesson 3 shows how market demand and supply conditions affect the price of a product and it shows the laws of supply and demand operate to determine price changes.

   b. We present two models of how price of a product is determined by the interraction of demand and supply in a market.

      (1) for the case of perfect competition
      (2) for the case of perfect monopoly

   c. These two extreme types of markets are compared to learn the differences between production, prices and profits in the two kinds of markets, and to compare the effect on the welfare of consumers and producers of the 2 market types.

   d. Lesson 2 of the unit is a short lesson on the use of models and the scientific method. The purpose of this lesson is to convince students of the need for using models to describe the price system and to increase their willingness to study the 2 models we present.

2. A study of competition in actual markets in the U.S.

    a. These lessons are used to study how varied competitive conditions really are in the U.S., how competition actually works and how well it works in different industries.

    b. The three industries chosen for close study - aluminum manufacture, auto manufacture and telephone services - are all closer to pure monopoly than to pure competition. These industries are chosen because of the importance in our economy of highly concentrated, mass production industries. Each industry illustrates a different group of characteristics and problems to be solved.

    c. In studying these industries, it is important for students to understand that competitive conduct of firms in an industry is determined by the market structure of the industry - the conditions of supply and demand confronting the firms. The performance of the industry - its efficiency and ability to satisfy wants - depends on competitive conduct and therefore on the market structure.

3. A study of government policies which regulate market competition, and of the effectiveness of these policies in protecting public welfare.

    a. This is a study of two basic policies and a survey of a group of others:
        (1) basic policies: antitrust laws and public regulation of business;
        (2) other policies: subsidies, tariffs, government ownership, government procurement, patents.

    b. The government regulation and control over the three industries are analyzed to provide illustrations for a brief discussion of the effectiveness of government policies to control markets.

4. Student analysis of the effect of high concentration of market power and of the major problems of economic organization raised by the existence of a large proportion of highly concentrated industries.

D. Major Objectives of the Unit

1. The lessons in this unit should provide students with two kinds of intellectual experiences:

    a. We hope that students can learn what market competition is and what it means to compete by actually making business decisions themselves. In both the studies of the theoretical models and in the case studies of real industries, the class activities should be organized to get students to try to make decisions as if they were the business executive faced with a decision to be made under certain market conditions.

This roll playing has two advantages: Students start to get a feeling for the need for rational decisions and start to learn how to make them. Secondly, they start to understand the excitement and the danger of the biggest gambling arena of them all.

b. Students will get practice doing some economic analysis by manipulating models to draw conclusions about "ideal" market conditions, and in using summary data to form and test hypotheses about the conduct and performance of a particular industry.

2. The unit should give students enough practical experience analyzing markets and enough information to enable students to reach certain conclusions about the U.S. market system:

a. There are many kinds of competitive conditions; the way firms compete and the effect of the competition depends on industry market structure.

b. Oligopoly is a dominant market form in the U.S., so the price mechanism is somewhat out of kilter. Prices do not always change as often as they should and profits may be higher than they would be under more competitive conditions.

c. The efficiency of an industry's organization must be judged in the light of market characteristics. Not all monopolies or oligopolies are bad. Most are inevitable - they are a natural development due to the existence of economics of scale.

d. Government interference in markets is necessary to prevent businesses from monopolizing markets and from pursuing policies detrimental to consumers, but determining effective government policies is very tricky.

e. Note of Caution

1. We use two theoretical models - perfect competition and perfect monopoly - to state and compare the efficiency (performance) of the two extremes market types. They provide a basis of comparison when studying the efficiency of a real industry. They are not studied because real markets are supposed to operate or do operate like the model ones. The two models are not models for prediction or of perfection. They are idealized models which allow one to predict behavior under the "perfect" conditions. When we mean by "perfect" "complete" - perfect competition means complete or absolute freedom of entry into a market, and a completely standardized product; perfect monopoly means a market with one seller and no possibility of entry of a competitor.

2. The theoretical analysis of these two model markets in economics is like a laboratory experiment in the natural sciences. It is the way economists study the effect on competitive behavior of firms when market conditions are given and known. The predictions of competitive actions in the model world provide hypotheses about what happens in real markets under somewhat different conditions.

3. Lesson 3 is a longish lesson using supply and demand curves to show how prices are determined and how they change. This lesson may be rough going for some classes. It's main use is in getting students to understand:
   (a) the meaning of demand and supply as functional relations between price and quantity
   (b) the meaning of demand and supply conditions - all the other variables which affect quantity bought and sold.
   (c) the meaning of price sensitivity of demand and supply - elasticity of demand and supply. It is very important for students to understand this idea and the easiest way is to show it on a graph. If students can't understand graphs, obviously this isn't very helpful. We have tried to provide as much help as we can in simplifying this analysis, but you may want to ignore the graphic analysis, and try to cover these ideas without the rigorous geometric treatment.

UNIT II

LESSON NO. 1

THE DEFINITION AND FUNCTION OF THE PRICE SYSTEM

2 DAYS

ISSUED APRIL 1966

Instructor's Materials

1. Purpose of Lesson
2. Content Outline
3. Prerequisite Objectives and Learning Experience Objectives
4. Suggested discussion questions and lesson sequence.

Equipment Needed

none

Student Materials

1. Essay from Robert Dorfman, The Price System.

UNIT II, LESSON 1 PURPOSE

This is an introduction to the unit and it should present students with an overview of the unit - of what the price system is and generally what it does. Actually, students will not learn the answer to this general question until the unit is completed. Students should understand the three functions of price and why the two preconditions of wage earning and private property must exist in an economy which operates as a price system. This lesson should be used to inform students about the general objectives of the whole unit so that they see the connection between lessons in the Unit.

OUTLINE

I. Definition of the Price System

  A. The price system is a system of economic organization in which each individual, including in that term legal individuals such as corporations, decides for himself what contribution he will make to the economy with the understanding that he can sell that contribution at a price acceptable to him and the buyer, and that he can obtain the goods and services contributed by other individuals only at prices acceptable to them.

  B. Social conditions necessary for the existence of a Price System

    1. People work for wages - there is relative freedom to hire, fire workers and for workers to quit a job.

    2. People have the right to possess private property and to dispose of it at will.

      a) they have the right to enter into contracts

  C. Questions which have been raised by critics about the efficiency of the Price System.

    1. Can we trust important economic decisions to private individuals motivated by economic self interest?

    2. Is economic freedom a form of wage slavery for most people? How much freedom does the common worker have to choose a job and to quit a job he does not like?

II. Function of the Price System

  A. Induces people to work and assigns jobs.

    1. If demand is less than supply of a particular kind of work, then the employer offers jobs at a higher price.

    2. Alternate means of allocating jobs:

      a) bureaucratic assignment of jobs
      b) inheritance of jobs

  B. Compels consumers to choose between available products and services.

  C. Coordination of Economic Activity: information about the desire for and availability of goods and services must be transmitted to the people who have to act on it, and these people must react correctly to this information.

1. What is the most efficient way of transmitting the information?

2. Prices are an efficient means of conveying information.

3. Price system not only conveys information efficiently (is an efficient information system), it is a cybernetic system.

    a) cybernetic system is one which receives and generates information, and responds to it in order to attain a desired result.
    b) prices and price changes are the signals in the cybernetic system and the study of the price system is a study of an elaborate cybernetic system.

    When the price of a good changes, people respond by buying or selling more or less than at the previous price.

    (1) For instance, if the price of air flights to Europe drops, buyers will respond by buying more tickets and sellers may wish to sell fewer tickets. Furthermore, the fact that people spend more on going to Europe suggests that they will buy less of other things - say trips to Nevada to gamble. This may cause a drop in price of air flights to Reno.

    (2) The example of the bread and wine economy shows how a price system works in a simple economy. It shows the cybernetic system working in a simple economy. To help you in discussing this example in class we present a careful outline of Dorfman's argument below.

III. The Operation of a Price System - The Bread and Wine Country Example

A. Description of (assumptions about) the Imaginary Economy

1. The country being studied produces and consumes only two products, bread and wine. There are only two occupations - farmer - miller - baker, or vintner.

2. The economy can produce enough bread and wine to provide each inhabitant with a daily ration of 15 oz. bread and 10 oz. wine.

    a. Thus, GNP/day = (15 oz.bread) # people + (10 oz/wine) # people
    b. GNP could be made up of other proportions of bread and wine, but the economy is fully employed when it produces 15 oz. bread and 10 oz. wine per person - or some other proportion of bread to wine per person which keeps all people, land, and capital fully employed.

B. Example 1:

1. Assume there are no prices and that the output is distributed equally among the inhabitants. Every man, woman and child receives 15 oz. bread plus 10 oz. wine per day.

2. Dorfman says that this non price system is wasteful. What he means by wasteful is that the decisions of what to produce and how to distribute the output are not made to maximize consumer satisfaction, even under the assumption that the society wants equal distribution of output (income).

3. He says the non price system is wasteful for two reasons:
   (1) The equal distribution of output - 15 oz. bread and 10 oz. wine - ignores individual differences in wants and needs. The poor babies - they'd be drunk constantly! The only way to overcome this would be man-to-man or man-to-baby bartering. And barter, as we know, is a wasteful form of exchange. It takes up too much time. To summarize, the rationing of output equally among the population suppresses (ignores) an important kind of information - people's desires for or demand for bread and wine.

   (2) A second kind of information is ignored. The economy produces 15 oz. bread and 10 oz. wine, it produces bread and wine at a 1 1/2 to 1 ratio. This assumes a given way to use land, labor, and capital. How do we know for sure that this is the right use of resources? Perhaps people would get more satisfaction from production of a different proportion of bread to wine.

C. Example 2:

1. Now, change the assumptions slightly to allow prices to exist:

   a. Assume an acre of land can produce either 15 oz. bread per day or 10 oz. wine per day.

   b. Each person is given 60 louies per day to spend as he pleases.

   c. Assume price of bread = 2 Louies/oz.
      price of wine = 3 Louies/oz.

   d. Assume that prices can change in response to the demand for and supply of bread and wine.

2. The advantages of this price system: These prices inform

the population the quantity of scarce resources consumed by each purchase. Price reflects (or equals) the alternative cost of production.

a. Dorfman sets the price of each commodity so that for both bread and wine the price/oz. times oz./acre = the same # Louies

For bread: 2 Louies x 15 oz. = 30 Louies
For wine: 3 Louies x 10 oz. = 30 Louies

Why is this important - what information do prices provide here? The price equates the cost of resources used up in producing and consuming an equal value of bread and wine. 30 Louies of wine and 30 Louies of bread both use up the same amount of resources. The cost of producing 15 oz. of bread is 10 oz. wine which could have been produced by the same acre of land. One and one-half oz. of bread is equivalent to one oz. of wine. The alternative cost of 15 oz. of bread = 10 oz. of wine. Each equals 30 Louies.

b. The price should also reflect the tastes of consumers. People are now free to buy as much of each product as they can for 60 Louies/day. If the 15/10 ratio of bread to wheat is incorrect, what will happen?

For instance what if, on the average, people want to consume 18 oz. bread/day and 8 oz. wine?

(1) there would be excess demand for bread and an excess supply of wine
(2) the excess demand and supply is eliminated by price changes. For instance, the price of bread would rise to 3 Louies/oz. bread, and the price of wine would drop to 1 1/2 Louies/oz. wine.
(3) now resource use is out of line.
One acre of wheat produces 45 Louies bread/day
One acre of grapes produces 15 Louies wine/day

The man consuming an acre's worth of bread is paying more than a man consuming an acre's worth of wine. The fact that the price ratio has changed in this way means people are willing to forego wine for bread.

(4) Convert land from wine to bread making. This would drop and the price of wine would increase - How much? Prices would go back to 2 Louies/oz. bread, 3 Louies/oz. wine. Land would be converted from wine to bread prodution until total output yields 18 oz. bread/day and 8 oz. wine/day for each person in the economy.
    (a) in this system

c. Summary:

(1) In this system prices do two things and they therefore provide two kinds of information used by buyers and sellers for making economic decisions: they reflect the cost of production; and they reflect consumer preferences.

(2) producers compare these preferences (seen through price changes) with the costs of production of different commodities and decide what and how much to produce.

d. This example of wine and bread leaves out several important factors which operate in a real life market or price system. The addition of these factors only complicates the job of coordination, it does not change the operation of the system.

D. The Effect of Profits as an Incentive in a Private Enterprise Price System

1. There is one important feature of a private enterprise, a price system which has been left out of the above analysis, that is the question of incentives. What makes the producers switch from wine to bread production? In a private enterprise price system income is not equally distributed but is distributed according to the person's contribution to production. For the businessman, this income is profits, and the businessman decides what to produce according to what is most profitable.

a. When profits drop, some businessmen switch to a more profitable business. The competition between businessmen to produce the most profitable goods and services assures that prices change in response to changes in demand and supply and assures that the cybernetic system works to produce that combination of goods and services which will give the population the greatest possible satisfaction.

b. When production in the price system is carried out by highly competitive businesses, prices will change so that consumers get the most satisfaction possible for the income they have to spend.

c. The attempt to make high profits can also lead to the breaddown of competition and the development of monopolies. Monopolies distort prices. Prices are too high and they change less frequently. They do not accurately reflect the cost of production and consumer preferences. Under these conditions the price system may not maximize consumer satisfaction.

PREREQUISITE OBJECTIVES

1. Students write a short essay (not more than 200 words) explaining why the two preconditions stated below must exist in a price system:

   A. The condition that people work for wages and employers and workers are free to hire and fire, accept or quit jobs;

   B. The condition that people can own property and can enter into contractual arrangements to sell or lease their property.

   The answer should show that students can define the three functions of price system stated in the content outline above, and show that these functions could not be performed without the above preconditions.

LEARNING EXPERIENCE OBJECTIVES

1. Students should spend time in class mulling over the contention made by Dorfman that prices carry the information needed by buyers and sellers to make their market decisions. Perhaps one way to get students to understand the usefulness of prices is to get them to imagine a society without prices. How would you know what and how much to buy? How much one buys or sells depends on prices of alternative goods and services.

2. Students should also discuss the contention made by Dorfman that the price system is a cybernetic system in that price changes set off automatic reactions in buyers and sellers which bring about the correct reallocation of resources. "Correct" here means the allocation of resources to conform to consumer demand. The fact that the price system is automatic and self regulatory is what has always intrigued economists and businessmen alike. The question confronting the government is, does the system really work to serve the public interest.

The main purpose of this lesson is to give students a summary view of the function of prices and the price system, and to describe what the class will be doing in the lessons in this unit.

The Dorfman article is very good and concise, but probably too difficult for many students. There are many ways to handle the use of the article. You might have students write a precise of part of it or outline the main body of argument in sections 2 and 3.

The main points made which will probably be difficult for the students are the following:

1. The price system coordinates economic decisions to make sure that the output demanded by consumers is produced.
2. Prices are an efficient way of transmitting information - information about demand and supply conditions.
3. The price system is not only an information system, it is a cybernetic system.

A cybernetic system is an automatic feedback system which responds to signals it creates itself. It is an automatic system and it is automatically self correcting. It may help to study in class Dorfman's example of the function of prices and the examples I provide below. Then compare the cybernetic aspect of consumers and supplier responses to price changes with other more familiar cybernetic systems like hunger and the human digestive system, thermostatic control of heat, an auto pilot.

Use this lesson to discuss the purpose and activities of the whole unit. Summarize what students will be doing for the remainder of the unit.

SUGGESTED SUMMARY EXERCISE ON HOW THE PRICE SYSTEM WORKS AUTOMATICALLY TO ALLOCATE SCARCE RESOURCES TO CONFORM TO CONSUMER DEMANDS

1. For the following examples, go through the chain of reactions of buyers and sellers to the following changes, assuming the markets are highly competitive.

   A. Demand increases for cotton textiles and declines for hand woven silk brocade.

Reaction of	Cotton industry	Brocade industry
1. price		
2. profits		
3. quantity supplied		
4. price		
5. profits		
6. amount of cotton,brocade produced		
7. number of business firms		

   B. A new machine is invented to further increase labor productivity in producing men's shirts

The short-run (immediate) reation

1. cost per unit

2. output per day of existing companies

3. price of shirts

4. wages of workers

5. profits of each business

The long-run reaction (a year or so after the invention is introduced)

1. number of business firms

2. price of the garment

3. profits of each business

4. number of shirts sold

2. In these cases who ultimately determines what is produced?

   ____

   What factors determine how will goods and services be produced?

   ____

   To whom will the output be distributed?______________________

3. In these examples what are the underlying assumptions about the nature of market competition

   a. number of buyers and sellers competing with each other

   b. size of purchases or sales of each buyer or seller in the market

   ____

   c. collusion between buyers or sellers to control the market__________

   ____

   d. ability to start a new business______________________________

   e. motives of businessmen____________________________________

   f. motives of workers ______________________________________

CCC Dept. of Education
SW:mr 4/28/66 150c

4

LESSON NO. 2

UNIT II

MODELS: THEIR MEANING AND APPLICATION IN THE SOCIAL SCIENCES

2 DAYS

Table of Contents and Specifications

Instructor's Materials

1. Purpose of the Lesson
2. Prerequisite Behavioral Objectives
3. Lesson Sequence
4. Program on Models
5. Film on Models

Equipment Needed

Days 1 and 2, 16mm. film projector

Student Materials

1. Purpose of the Lesson
2. Content Outline
3. Program on Models

PURPOSE OF THE LESSON

This is a short lesson (2 days) designed to convince even the most skeptical student that there is a legitimate use for theoretical models, and to show how models can be used to explain and to predict economic events.

CONTENT OUTLINE

I. Definition of Scientific Models
  A. General definition of models:

"n., adj., v....-n. 1. a standard for imitation or comparison; a pattern. 2. a representation, generally in miniature, to show the construction or serve as a copy of something. 3. an image in clay, wax, or the like to be reproduced in more durable material. 4. a person or thing that serves as a subject for an artist, etc. 5. one employed to put on articles of apparel to display them to customers. 6. mode of structure or formation. 7. a typical form or style. --Syn. 1. paragon; prototype." *

  B. Definition of scientific models:
    1. Models to explain - show how the parts of a complex entity are related.
      a. street maps show relations between geographical points.
      b. cut-away models of auto engines show how engine parts are related.
    2. Models to predict - show what will happen in the future if some set of conditions exist in the present.
      a. the mathematical equations for ballistics missiles predict where they will land.
      b. chemical equations predict what will happen if certain chemicals are placed in solution.
    3. Models which are ideal patterns - allow us to compare the real world with the ideal world in an effort to identify changes which could be made in the real world in order to bring it closer to the ideal.
      a. a model student - the non-existent creature who makes straight A's, wins four letters and is student body president--gives a basis for judging the performance of real students.
      b. the circular flow model of the national economy that operates at a constant rate helps us to analyze the real economy.

II. Attributes of a Model
  A. Models are abstractions. To abstract is to withdraw, separate, take away, e.g., to separate by the operation of the mind, as notion of political power from the reality of an actual social organization.

---

* The American College Dictionary, Random House, 1963.

1. Abstractions simplify by selecting from the real world only those facts which are important to the purpose of the abstraction -- the rest of the real world is left out. For example, equations about ballistics missiles take into consideration such things as weight, the thrust of engines, changing air densities, etc. But they do not include the color of the uniform of the soldier who fires the missiles or the political organization of the country of destination.
2. Models restrict the scope of reality by setting up rules or limits.
    a. they ignore extreme cases, e.g., the missiles that blow up on the launching pad.
    b. they assume that the objects or people being studied will always act in the same way, e.g., that the families in the circular flow model will always spend all they earn.

B. Models are never completely realistic because they are not real life but only representations of real life.
1. it is restricted and thus cannot explain or predict everything that might happen.
2. the assumptions about what should or should not be included might not be an accurate representation of reality.
3. when facts about reality are not available, models often include guesses about reality.

C. Forms of Models -- a model may take many forms. For example, diagrams, numbers (equations), words and physical representations.

D. Steps in Making Models -- there are six basic steps in making models:
1. Select observations from real world
2. Construct model
3. Test model to see if it explains or predicts accurately
4. Revise model if necessary
5. Test again
6. Repeat 3 and 4 until model explains or predicts accurately

E. Qualities of Valid Models:
1. A model is judged by the extent to which it performs the function it is designed to do.
    a. A predictive model is considered good if it does a good job of predicting.
    b. An explanatory model should provide a good explanation.
2. There is no such thing as a "true" or a "false" model. A model is not reality. A model is a model; therefore truth is not a consideration

UNIT II, LESSON 2

PREREQUISITE BEHAVIORAL OBJECTIVES

After viewing the film and working the program, students will,

1. When asked what are the two main uses of models, select from a list the terms "explain" and "predict"
2. When given a list of the six steps needed to make a model in which two of the steps are out of order, identify these two steps.
3. When given a list containing examples of models and things which are not models, discriminate models and non-models on the basis of whether or not the examples explain or predict.
4. When given a list of definitions, choose the correct definition for the term "abstraction" as defined in this lesson.
5. Given ten true/false items, pertaining to the characteristics of a model, correctly label at least eight of them.
6. When asked for a third use of models, choose from a list of statements, the statement "to compare an idealized model with the real world in order to identify changes needed to bring the real world into conformity with the ideal."
7. Given a simple model with specific assumptions, choose from a list those events which are inconsistent with the assumptions.
8. Given a simple model with specific parameters, choose from a list those parts of the real world which are not included in the model.

UNIT II

LESSON 2

DAY 1

1. View film and engage in classroom discussion on prerequisite objectives 1-2.

2. Homework assignment: complete half-hour program on models.

DAY 2

1. Classroom discussion on prerequisite objectives 3-8 in order to clarify the points from the film and from the program.

2. View film a second time to reinforce learning which has occurred.

UNIT II

LESSONS 3 - 6

Market Competition Under Conditions of Perfect Competition and Perfect Monopoly

1. Market Demand and Supply
2. Arithmetic Line Graphs
3. Market Price Determination
4. Price changes: The Law of Supply and Demand
5. Resource Allocation in Perfectly Competitive Markets
6. Resource Allocation in Perfect Monopoly Markets
7. Comparison of the Effects of Perfect Competition and Perfect Monopoly

12 DAYS

Instructor's Materials

1. General Statement of Purpose
2. General Description of Teaching Materials and Their Use
3. Content Outline
4. Lesson Objectives and Purpose (Worksheet Answers)
5. Bibliography
6. Overhead Transparencies for Part II of Worksheet, and to Illustrate the Law of Supply and Demand

Student Materials

1. Essay on Price Theory
2. Worksheet on Price Theory

GENERAL STATEMENT OF PURPOSE

1. The over-all objectives of Lesson 3 - 6 are:

   A. To prepare students to do the case studies in lesson 8 and 9. In particular, students should learn what to look for in studying an industry -- market structure, competitive conduct, and industry performance.

   B. To show how the competitive market mechanism allocates resources to conform to consumer demand and existing supply of scarce resources.

2. Students should reach the following conclusions as a result of completing lessons 3 - 6:

   A. Perfect competition is far from perfect:
   (1) producers are constantly threatened with extinction, profit-making innovations cannot be protected, prices and production levels change constantly; business conditions are very unstable, and this means income of factor owners is unstable, or atleast, requires constant changing of jobs, occupations, businesses to maintain a stable level of income.

   (2) It's hard to get very rich. If there is really free entry into any market, profit rates are low, income is more-or-less equally distributed.

   (3) This market type is inconsistent with mass production techniques, because with mass production, demand is not large enough to accommodate many producers in a market.

   B. Monopoly power distorts free markets by restricting sales, raising price:

   (1) Consumers no longer have complete control over resource allocation
   (2) Monopoly impairs freedom of other firms; to compete;
   (3) Monopoly can impair progress because the monopolist is not under pressure from competitors to introduce improvements in product and production techniques;
   (4) Monopoly inhibits justice;
   (5) Monopoly promotes stability;
   (6) Monopoly is more consistent with mass production techniques than free competition.
   (7) One can get rich this way, and even raise wages for ones employees

3. There are several experience objectives of this section:

   (1) We want to give students practice using economic models to study the logical consequences of a set of initial assumptions.

   (2) We want students to understand that the "perfect" markets of competition and monopoly are not real or perfect in the sense that

the goals of the society are to make real markets into either one of these forms of market structure. The perfect markets are useful mainly for purposes of comparison.

(3) We want students to experience market competition. What it is really like to be a business man in a highly competitive market, and in a highly monopolistic market. In order to operate successfully as a competitor one must be rational and keep cool. If possible, students should be put in a situation in class which allows them to discover the importance of rationality in successful market competition. They should experience the ruthlessness and impersonality of competition and learn to react appropriately, -- through collecting data, weighing evidence, analyzing alternatives, calculating of probabilities, making a decision. You can't blow your cool in a poker game or in market competition.

GENERAL DESCRIPTION OF TEACHING MATERIALS AND SUGGESTIONS ON THEIR USE

These lessons are centered around the following materials:

(1) A student essay. Actually, this is more like a text chapter. It presents in systematic progression the analysis of supply and demand, using illustrations to apply the theory. The complete analysis is provided in the essay, along with the applications.

(2) A student worksheet. The worksheet has six parts, each one conforming to the major sections of the essay. For most of the content of these lessons, worksheet provides examples in addition to those provided in the text. There are two exceptions in which the major part of the analysis or student experience comes from working the worksheet frames: We provide exercises to teach students how to construct and analyze line graphs in Part II of the worksheet, and in Part V we set up some examples for students to work through to draw conclusions about monopoly. Neither of these two subjects is discussed fully in the essay.

(3) Overhead transparencies to aid in the analysis of line graphs and in illustrating the law of supply and demand.

The essay contains the complete message of the lessons (with the exception of the line graphs and monopoly analysis which are developed in the worksheet rather than in the essay). Probably the best strategy for the teacher to follow is to work out a procedure to guide students through the analysis presented in the essay, using lecture-discussion and class demonstrations, and whatever worksheet frames seem helpful in enabling the students to understand the theory.

It is not necessary for students to be able to reproduce from memory all of the theory presented in these lessons. These lessons are more like elaborate demonstrations. This means that the students should be able to follow the argument or line of reasoning at all points in the analysis. This gives a clue as to how class discussions or lectures should be carried out. As you go through the theory in class, you should constantly question students to make sure they are following the analysis, and to give you the tip-off on what needs further explanation. Thus, you should get students to supply the small parts of the analysis as you go along. Ask for questions and ask other students in the class to answer these questions. If students don't have questions, you ask ones which will indicate how well students are keeping up with the analysis.

We have found that the main reason most students have trouble with demand and supply curve analysis is that they don't understand what a line graph is or how to read one. Therefore, we have provided a fairly carefully worked out set of examples and problems. We suggest below how to help the students complete Part II of the worksheet, basically, we suggest that in class you show students how to construct the graphs using the chalkboard or overhead projector. Then allow them to complete the problems at home.

We have deliberately excluded a summary analysis of monopoly in the essay. The reason is that we think that the students should have a chance to do some analysis for themselves. If they have grasped the market analysis for perfect competition, they should be able to work out their own analysis for perfect monopoly. Hopefully, successful completion of

Part V of the worksheet, will give students more understanding of the nature of competition.

One general word of caution. Students are not used to careful, logical analysis -- drawing logical conclusions, given initial assumptions. We have found that students get hung-up if any little part of the analysis is left out, on the assumption that it is obvious. Unless you are teaching a fairly talented group of students, don't take shortcuts by leaving out certain little points which seem obvious to you; this may confuse students.

UNIT II

LESSONS 3 - 6 CONTENT OUTLINE

This outline is brief because the content for these lessons is carefully stated in the student readings. This outline is a summary of the organization of the student readings.

I. Market

A. A market is the total group of buyers and sellers of a good or service.

1. A market is not a place, but a group of people, all the people who buy or sell the good or service.

2. Geographic limits of a market: Although a market is not a place, it does have geographic boundaries. A product may be sold in a regional, local or national market. The market region of a good or service is that region which includes all or almost all of the buyers and sellers of the product.

a) If 99.44% of the buyers and sellers of cement are in roughly equivalent to a 100 mile radius of San Francisco, then that region is the geographic boundary of the market.

b) If California Redwood is sold to buyers all over the U.S., then the California Redwood market is national, even though the lumber comes from only one specific location in California.

B. Demand side of a Market

1. Demand for a product is the amount of the product which will be purchased at different prices.

a) Demand is stated as a table or schedule showing a set of prices of the product, and corresponding to each price, the quantity which will be sold at this price.

b) Demand can also be shown as a curve or line graph. The graph shows visually the relationship between price and quantity demanded.

c) Demand is "effective demand", the amount people will buy at a particular price. In defining market demand it is of no concern how much people would be willing to consume if the good or service were free.

2. Characteristics of demand: the negative relation between price and quantity demanded. The demand curve has a negative slope. People buy more of a product at low prices than at high prices. The explanation for this:

(a) One derives less additional satisfaction from consuming additional amounts of something at a particular time.

(b) People have a limited income to use to buy the things which will satisfy their wants.

(c) Limited income means that people must choose what they buy wisely to try to get the greatest satisfaction from their fixed income.

(d) If there is a decline in the added enjoyment from consuming greater amounts of one thing, a person will be less willing to buy large amounts of the thing unless the price is very low.

(e) Therefore, if the price of a thing increases, people will buy less of it and will substitute other goods or services for it.

Elasticity of demand:

3. The amount of quantity demand changes as a result of a price change.

A. If demand is very responsive to a price change, this means that a small change in price will result in a larger than proportionate change in quantity bought. If demand is highly responsive to a price change, demand is said to be elastic.

B. If demand is not very responsive to a price, change, demand is inelastic. A change in price will not result in large change in quantity sold. The percentage change in quantity sold is less than the percentage change in price.

C. Factors affecting elasticity of demand:

(1) the percentage of income spent on the product or service;

(2) availability of substitutes

(3) the extent to which the good or service is a necessity.

4. Demand conditions:

a. There are things which affect how much people will buy at each price. These factors which affect the relation between quantity demanded and price are called demand conditions.

b. Major demand conditions:

(1) income

(2) price of substitues

(3) availability of credit and cost of borrowing

(4) tastes

(5) expectations about the future (income changes, changes in the product, its price, etc.).

c. If any one demand condition changes, the relation between price and quantity changes; there is a new demand curve. The curve shifts to the right when demand increases, to the left if demand decreases.

(1) Increase in demand means that the amount bought at each price is greater than it was before.

(2) Decrease in demand means that the amount bought at each price is less than it was before.

C. Supply

1. Define: Supply is the amount sold of a product or service at each possible price, under given supply conditions.

2. The amount supplied at each price depends on the cost of producing the output and on the number of suppliers.

3. The fact that there is a positive relation between price and quantity means that producers will offer more for sale at higher prices. There is a positive relation between price and quantity supplies because, in the short-run when the size of the firm is fixed, the average cost of production is greater for higher volumes of output than for lower output levels. This is because of the law of diminishing returns.

4. Supply conditions:

a. These are the factors which determine the relation between price and quantity supplied.

b. Supply conditions include:

(1) number of firms supplying the good or service;

(2) price of inputs or other costs of using inputs;

(3) methods of production

(4) the nature of the product or service

c. Effect of a change in supply conditions:

(1) If supply increases, the supply curve shifts to the right and more is offered for sale at each price.

(2) If supply decreases, it shifts to the left and less is supplied at each price.

D. For a particular period of time, the conditions for a given market are summarized by plotting the demand and supply curves for the market on one line graph.

II Line Graphs

A. Define

B. Rules for constructing an arithmetic line graph

C. A line of curve is described by the following characteristics

1. The variables whose relation to each other is visualized by the curve

2. Intercepts of the curve with the two axes

3. Shape of curve:

   a. sign of the slope

   b. value of the slope

   c. if or how the slope varies

III Price Determination

A. The market price and quantity sold is that price and quantity where demand and supply are equal, the intersection of the demand and supply curves.

B. At any other price there will be either excess demand or excess supply which will cause price to move toward the equilibrium price.

1. If the price is above the intersection of the demand and supply curves, there is excess supply and competitive bidding between suppliers to sell their extra output will force price down.

2. If the price is below the equilibrium price there is excess demand and competitive bidding between buyers will force the price up to the intersection of the demand and supply curves.

3. The market price is called an equilibrium price because it is the price where the market will settle down.

C. Price and quantity sold change whenever demand or supply conditions change. The Law of Supply and Demand summarizes the direction of price and quantity changes.

1. Under given demand conditions:

   a. an increase in supply will cause a price reduction and an increase in the quantity sold.

   b. a decrease in supply will bring about an increase in price and a decrease in quantity sold.

2. Under given supply conditions:

   a. an increase in demand will cause a price and quantity increase;

   b. a decrease in demand will cause price and quantity sold to decline.

3. If both demand and supply change at the same time, it is not possible to predict the direction of change in both price and quantity because for either price or quantity sold supply and demand result in opposing influences.

IV Resource Allocation Under Conditions of Perfect Competition

A. Conditions of Perfect Competition

1. So many small buyers and sellers that no one buyer or seller has any control over price. That is, none in the market can affect price by withholding his supply or demand. The demand curve for any one supplier is a horizontal line drawn at the market price. The supplier's demand curve is infinitely elastic.

2. There are no barriers to entry into the market.

3. All producers produce a product identical to that produced by every other producer.

4. Buyers and sellers try to maximize their gain and they have the necessary information about the market to make rational decisions.

B. Short-run Market Reactions

1. Whenever demand or supply change, price changes. The price changes affects the amount sellers produce and their profits.

C. Long-run Market Reactions

1. Whenever there are excess profits, the condition of free entry assures that new firms will enter the supply side of the market, increasing supply and reducing price. This competition will force the price down to a level which just allows firms in the market to make a normal profit when they are producing as efficiently as possible. Thus, in the long-run, there is a tendency for

   a. price of the product to equal cost-per unit plus a small markup for profits, just enough profits to induce the firms to stay in business.

   b. cost per unit is as low as is possible

   c. each firm is producing at a volume which allows full utilization of plant and equipment. There is no waste of factors of production.

2. The condition of free entry, not only means that new firms enter and leave at will, but that any invention will be copied. Thus, any

improvement in the product or in the means of production which increases profits will be copied immediately by competitors.

V Resource Allocation Under Conditions of Perfect Monopoly

A. Conditions of Perfect Monopoly

1. One firm supplies the entire market.

2. There are complete barriers to entry of competitors.

B. Long-Run Market Conduct

1. The monopolist chooses a level of production and price which will maximize his profits. He will restrict quantity sold in order to charge a higher price and earn higher profits.

2. The monopolist is not forced by competition to introduce new inventions until it is profitable to do so.

3. A monopolist may deliberately prevent competitors from entering the market.

VI Monopoly and Perfect Competition Compared: What Conclusions can be reached about the Merits of Perfect Competition and Perfect Monopoly?

A. Perfect Competition

1. The market is very unstable. Price, the number of firms in the market, and profits change whenever demand or supply conditions change.

2. Profits are low, and a firm is not permanently rewarded for inventing new things, because competition will cause other firms to copy the invention.

3. This form of market can only exist if demand is large enough to support a very large number of firms producing at the most efficient scale of operation. For this reason perfectly competitive markets are uncommon today because mass production techniques mean that a few large firms can produce enough to satisfy total market demand.

4. The consumer gets the product at the lowest cost.

5. Market price fluctuations assure that resources will be allocated to conform to changes in consumer tastes.

B. Perfect Monopoly

1. Because the supplier can determine price, and because he does so make the highest profits for himself, consumers pay a higher price and buy less than they would if there were more market competition.

2. **Price does not necessarily change whenever demand and supply conditions change, so the allocative mechanism of the market is less efficient.**

3. **The market is more stable. Price changes less often, the firm can earn long-run excess profits.**

4. **The monopolist can decide when to introduce a new invention, the firm can wait until an opportune time, e.g., when**

5. **In some markets one firm can produce all of the good or service demanded. This is a case of a natural monopoly.**

LESSON OBJECTIVES AND PURPOSE
(Answers to Worksheet)

1. DEFINING MARKET

A. Prerequisite objective:

(1) Given a description of a market, students identify it as a local, regional or national market, and state in writing the reason for their choice. Correct choice of geographic extent of the market depends on the students' assumptions about the location of buyers and sellers who compete actively in the market. The criteria students should use for choosing the geographic region of the market is that who compete actively with each other in the process of exchange. The region should include practically 100% of the buyers and sellers.

B. Learning experience: Page 1 or readings and Part I of the worksheet.

C. Purpose: Students often do not really understand the definition of markets as made up of all competitors, the total number of people who buy and sell the product in competition with each other. This exercise gives students a chance to apply the definition for forcing them to choose the geographic bounds.

It is important for students to be able to distinguish roughly between closely related but different markets, in order to understand the industry structure of an industry like aluminum. This industry is made up of several markets, one for each stage of production. The markets are related because each represents the output of a stage of production (aluminum) and because some firms produce the output of each stage of production.

D. Teaching strategy: This frame can be taught two ways:

(1) To save time, you can give the students the rule or criteria for choosing the geographic limits of the market, and then see if the students can apply it to each case in Part I of the worksheet.

(2) Do not give the rule but have students work out each answer by arguing among themselves and with you. Then get them to state the rule that is implied in making these choices.

E. Answers to Part I of the Worksheet: The following are our answers knowing what we do about each of the markets. The students may come up with different assumptions about where buyers and sellers are located and therefore different geographic bounds. As long as they have applied the criteria correctly, their answers should be considered correct. It won't hurt, of course, to give them the added information and have them alter their conclusions on the basis of more realistic assumptions.

(1) Cigarette sales by manufacturers: This is a national market because the demand side of the market is made up of the total smoking population in the U.S.

(2) Purchase of major league baseball players: This is a national market because any seller can sell to buyers anywhere in the country, and vice versa. Buyers and sellers from all over the U.S. compete to buy major league players. This may not be so true for minor leagues, however.

(3) Retail car sales: This is a local or at most, regional market, because ordinarily the sellers in a given city or town sell only to local residents. Therefore, sellers over 100 miles from one another do not compete with each other to sell to a given buyer. A student may tell you that his uncle goes back to Detroit to buy a car every two years, or to Europe. This is true, but these are isolated instances.

(4) Sale of beauty shop services: This is a local market. The ladies do not usually go out of town to get their hair done, unless they are visiting out of town. Sellers in different towns are not competing with each other for customers.

(5) Sale of cement by manufacturers: This is a regional or local market. Because cement is expensive to transport, and because it can be produced almost anywhere, usually sellers in a region sell only to buyers located in the same region.

(6) Sale of California redwood lumber by lumber mills: This is a national market. Although all of the lumber is produced and sawed in one limited geographic location, buyers from all over the country compete for the supply. Students may have trouble with this one, so make sure to get them to apply the rule.

(7) Jet plane sales by manufacturers: Again, this is a national market, even though the manufacturers may be located in a few selected regions throughout the country.

2. DEMAND

A. Prerequisite objectives:

(1) Students can make up an example of the market demand for a product on a given day with the following properties: it is a table or graph showing a negative relation between the price of the product and the quantity of it which people will buy.

(2) From a group of alternatives, students can choose the correct reason why people tend to buy more of a product if its price drops: they substitute it for something else; or the additional amounts consumed of any product begin to give less additional satisfaction and therefore a person with a limited income will not buy additional amounts unless the price drops.

B. Experience objectives: Read pages 2 - 5 of the essay, draw and work with examples of market demand curves throughout the essay and worksheet.

3. LINE GRAPHS

A. Prerequisite objectives:

(1) Given an arithmetic line graph, students can read the graph, (e.g., for any given price in a demand or supply curve, they can give the quantity value corresponding to it).

(2) Given a line graph students can describe its major characteristics:

- (a) the two variables whose relation to each other the graph describes;
- (b) the intercepts if there are any;
- (c) the sign of the slope, whether or not the slope is constant, if the slope changes, whether it increases or decreases as the variable measured on the horizontal axis increases.

(3) Given a picture of a straight line curve, students can compute the slope of the curve.

(4) Given 4-5 line graphs describing comparable demand or supply, students can identify the curve which shows the greatest price responsiveness , which shows no price responsiveness, which shows a fixed quantity, etc.

(5) Given several demand curves, can identify the two which cannot be compared by using the graphs.

B. Experience Objectives: Students construct demand curves and tables from raw data. They compare two demand curves to determine which one shows the most price responsiveness.

C. Purpose: The object of this digression on the construction and reading of line graphs is to help students understand what graphs are and why they are useful. You are primarily interested in their ability to describe a curve in a split second - it's sign, its shape. This facility with line graphs is essential to enable students to understand the meaning of elasticity of demand, and to enable them to use supply and demand curves to predict market price, and changes in price resulting from a shift in demand or supply. If you intend to use the demand and supply curves to illustrate the law of supply and demand, it is essential that students can complete this exercise.

Advanced classes may find this exercise easy, nevertheless, they should be able to complete the quiz at the end of Part II without error before you go on to the supply and demand analysis.

D. Teaching Strategy: Part II of the worksheet is devoted to giving students the necessary practice in constructing and analyzing line graphs. We suggest that the instructor work with students as a group to go over the summary in 2 and use the overhead projector to construct the first demand curve in 3. Go around the room to make sure students are following your instructions and understand what is going on. Make sure that students construct their scales accurately, (equidistant scale markings) start each scale from 0, price is measured on the vertical axis and quantity on the horizontal axis.

Allow students to construct the demand schedule and curve for problem 2. In this example tell students to use the same scale of measurement for price and quantity for this example as they did in the first problem. This is important because we want to compare the slope of the two lines by comparing the angle with the horizontal axis, and this will not be possible unless they use the same units of measurement.

Number 5 and 6 can be done together. The instructor should describe the characteristics of a line graph by describing the demand for orange juice. Then have the class as a whole do the comparison between the demand for milk and orange juice, number 7, 8 and the quiz in 9 can be used for homework.

It is important to go over the answers to the quiz in class, and an overhead transparency of the six illustrations in the quiz is provided for this purpose. Students should be able to answer these questions quickly and easily. If they cannot, or if all of them cannot, it may be necessary to provide additional examples. Another test is provided here in case you need it.

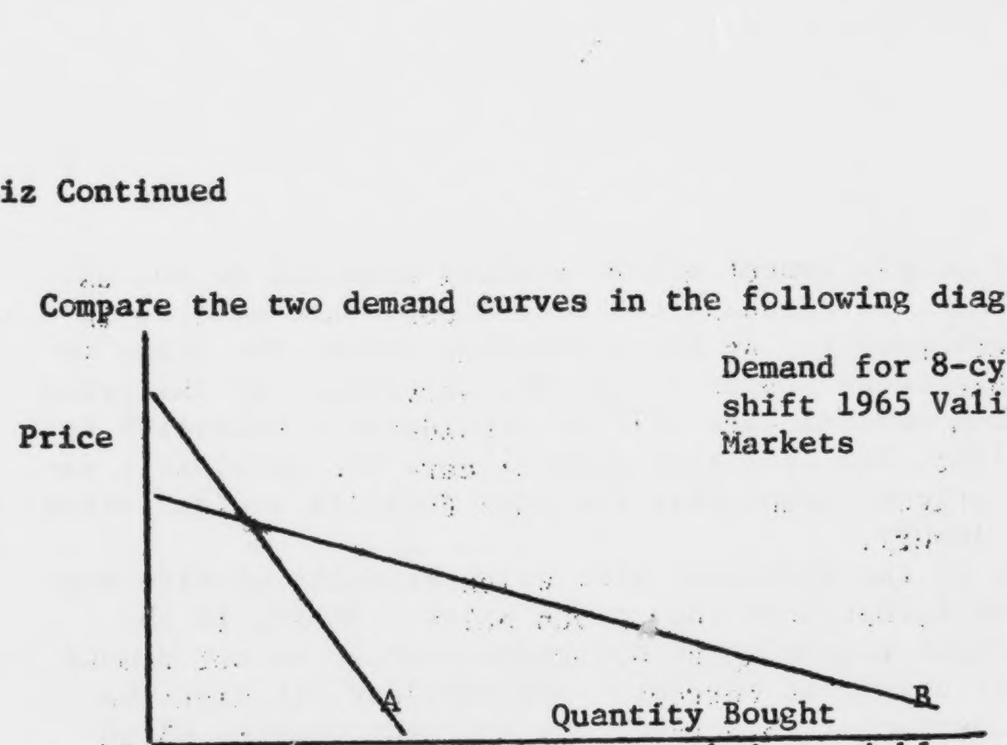
E. Answers to Part II of the worksheet: Most of these answers are obvious, however, correctly constructed graphs for problems 1 and 2 are given below. Be sure students start each scale at zero, use arithmetic scales, and plot price on the vertical axis. Also, make sure you use the same scales for both graphs. You will have to give students this instruction, because the instruction does not appear on the worksheet.

F. Additional Quiz Questions: Another quiz is included here in case you need more practice.

SECOND QUIZ ON LINE GRAPHS

1. Draw the following kinds of curves:
   - A. Straight line curve, positive slope, Y axis intercept at Y = 3
   - B. Curve showing that Y is constant
   - C. Curve showing X is constant
   - D. Diagram showing X and Y are both constant
   - E. Curve showing that X = Y
   - F. Curve showing a direct relation between X and Y, but one in which the slope declines to zero at a high value of X
   - G. Negatively sloped curve where slope gets smaller at larger values of X

2. Compare the two demand curves in the following diagram



Demand for 8-cylinder, standard shift 1965 Valiant in two different Markets

A. Describe curves A and B as to their variables and range and slope (sign, value, and change)
Demand A Demand B

B. Which demand curve shows demand as more responsive to a change in price of Valiant?

C. What can you predict, by looking at the two curves, about the buyers in the two markets?

4. ELASTICITY OF DEMAND

A. Long-term Behavioral Objectives:

(1) Students can state in writing the difference between elastic and inelastic demand, and can give examples of each. The definition should state that demand is elastic if quantity bought is responsive to price changes, or, alternatively that a change in price brings about a more than proportionate change in quantity demanded; or they may illustrate this by an example - 20% increase in price brings about a 5% decline in quantity sold.

(2) Given examples of given markets for a good or service, students can predict whether or not demand is elastic and can offer a valid explanation. These examples include the demand confronting one firm in a highly competitive market; the demand for one firm which has a virtual monopoly.

B. **Experience Objectives**: Students read the description of elasticity of demand on page 6-8, and they complete the exercise in the worksheet (p. 34).

C. **Teaching Strategy**: It may be necessary to discuss in some detail one point made in the readings. That is the contention that goods, like drugs, or services, like medical care are luxuries. This is an unusual definition of luxury, but it really is more accurate than our normal use of the word. If people cannot afford medical care and do not use what money they have to purchase these services, then medical is a luxury for these people. At the prevailing rates, the price is too high to enable these people to use the services. If the price drops enough, then medical care will be considered a necessity for rich and poor alike. The fact that medical care has an elastic demand at current prices, means that for many families medical attention is still a luxury.

The answers to the worksheet item which students provide may be correct but different from thos given below. Again, if the students use correct reasoning to determine whether or not demand is elastic, their answer is correct. Nevertheless, it might be useful for the instructor to correct any mistaken reasons which have allowed students to make their inference about demand elasticity.

D. Purpose: The concept of demand elasticity or price responsiveness of demand is very important, because the degree of price responsiveness of demand is a measure of the amount of competition between sellers. If demand is elastic, this means that there are close substitutes for the product, so a small price change causes a big change in quantity bought. The term "elasticity" is not so important for the students to learn; we use it because novelty of the word may provide a easy way to remember the characteristics of price responsiveness.

In studying a market, it is very important to determine whether or not the industry demand or the firm's demand is elastic to predict business competitive behavior. Whenever there is keen price competition in a market, this means that the demand for the product of any one firm in the market is highly elastic. Buyers do not much care from whom they make their purchases.

Demand elasticity is indicated by the slope of the demand curve; the closer the curve is to a horizontal line, the more elastic demand is.

E. Answers to Worksheet item 7 on p. 34:

(1) 1966 Mustangs - elastic, there are other kinds of competing cars.
(2) Jet flight - elastic, this is a luxury, expensive, and there are many other substitute ways to spend a vacation or large amount of money.
(3) Rubber bands - inelastic, low price, small part of anyone's income.
(4) T-bone steak - elastic, expensive cut of meat for which there are many substitutes;
(5) Gas at the corner station - elastic, there are many competitors near by.
(6) Cigarettes at the usual price - inelastic, necessity, small % of income, no cheap substitute.
(7) Cigarettes at $3.00/pack - elastic, there must be other ways to satisfy one's oral needs for less than $6.00/day for a two pack a day smoker.
(8) Gas at a station in the Mojave desert - inelastic, no substitutes.

5. Demand Conditions

A. Long-term objectives:

1. Students can list five major demand conditions: income, price of substitutes, tastes, availability of credit, expectations about the future.

2. Given information about some change in a demand condition, students can predict the effect on demand and on the demand curve, (e.g., if income increases, demand increases and the demand curve shifts to the right).

B. Experience objectives: Students read pages 9-10 in the text and in several exercises alter demand diagrams to show a change in demand conditions.

C. Purpose: It is very important that students distinguish between a change in the amount sold due to a change in price, and a change in demand conditions. Changing demand conditions explain the reason for changing market prices. It is important for the students to start thinking in terms of market demand and supply conditions because these are the underlying factors which determine price and quantity sold. In lessons 7 and 8 students will learn that these demand and supply conditions are the factors which determine the type of market competition between firms in an industry.

6. Supply

The study of the supply side of the market parallels the discussion of demand, so it is not necessary to describe this section except for unique aspects of market supply.

A. Prerequisite Behavioral Objectives:

(1) Given a table like the one shown below students can identify when diminishing returns set in (when labor input increases from 30-40 man-hours per day).

Total man-hours per day	Total output per day
0	0
10	50
20	150
30	250
40	325
50	375
60	400
70	400

(2) From alternatives, students choose correct explanation for the presence of diminishing returns, (that some factor of production is fixed).

(3) From alternatives students can identify how a firm can increase output and reduce cost per unit, (by increasing the "scale" or size of the factory or plant).

(4) Using the table above students can explain in one written sentence why the presence of diminishing returns makes firms willing to increase output per day only if price rises and can prove this point.(Average cost per unit produced is higher at higher levels of output. The firm pays the same amount for 10 additional man-hours but the added labor results in less and less added output, e.g., if the wage rate is $2.00/hr., for an additional $20.00 per day to 100 additional units are produced when output is increased from 150 to 250 /day. When output is increased from 375 to 400/day, cost increases $20.00 but output increases only by 25. It costs 4 times more per unit to produce the additional output at the higher level of output per day). Note: It may not be worth the time for students to be able to prove this point.

B. Long-term Objectives:

(1) Students can list the major supply conditions.

(2) Given a change in supply conditions students can explain factor price change, change in technology, change in the effect on supply (increase in wages decreases supply , the supply curve shifts to the right).

C. Purpose: The students should understand why there is a limit to the amount supplied at a particular price, and that, usually, more will be supplied at higher prices. Students should recognize that the amount supplied is dependent on cost of production. Supply conditions are all factors affecting cost of production.

7. PRICE DETERMINATION

A. Prerequsite Behavioral Objectives:

(1) Given a demand-supply diagram or schedule describing a given market students can choose the market price and quantity sold.

(2) Given information about either the existence of excess demand or excess supply in a particular market, students can state whether price is too high or too low.

B. Experience Objectives: Reading page 16-17 of essay, completion of Part IV, No. 1, class discussion. Students should be able to state verbally a proof of why the market price has to be at the price such that demand equals supply.

C. Purpose: This is the objective of the whole market analysis up to this point. This analysis shows how demand and supply interract to determine price.

8. LAW OF SUPPLY AND DEMAND

A. Long-term objectives:

(1) Given supply-demand curves for a given market plus a description of some change in market conditions, students can draw the appropriate shift in demand or supply and state the resulting change in price and quantity sold.

(2) Given a statement about a change in market demand or supply conditions, students can predict accurately the direction of price and quantity change. (e.g., supply increases, demand remains constant: price will drop and quantity sold will increase).

B. Experience objectives: After reading pages 18-21 of the essay students should be able to respond correctly to the instructor's use of the overhead transparencies used to show changes in demand and supply conditions.

Question No. 3 on page 36 of the worksheet extends this analysis of price and quantity changes a little further by showing that the amount of the price change depends on the slope of the demand and supply curves, and the amount of the shift in demand or supply.

9. RESOURCE ALLOCATION IN A PERFECTLY COMPETITIVE MARKET

A. Long-term behavioral objectives:

(1) Students can state the long-run effect on price profits, costs, number of firms supplying the market of competition in a perfectly competitive market: (price = cost plus a minimum profit margin, firms tend to produce at the most efficient level of plant capacity so that costs are a minimum, the number of firms in the industry changes with changes in demand).

(2) Students write an essay or answer question on the effect of perfect competition on economic freedom, stability, justice, and progress.

B. Experience objectives:

(1) After reading pages 21-23, students should be able to complete the exercise on page 37,38 and 39 of the worksheet which requires students to use market and firm demand and supply curves to show the effect on the market, a change in demand.

(2) To assess the total effect of perfect competition, students should discuss the degree to which market actions allocating scarce resources and promote the four basic goals of freedom, justice, progress and stability. The summary of this discussion can be written down in pages 40-41 of the worksheet.

C. **Purpose**:

(1) The exercise requiring students to trace the effects of an increase in demand is to get them to apply the demand and supply curve analysis.

(2) The students should analyze for themselves whether or not perfect competition is an ideal way for an economy to be organized by figuring out to what extent such a system would further the basic economic goals of a society.

D. **Teaching Strategy**:

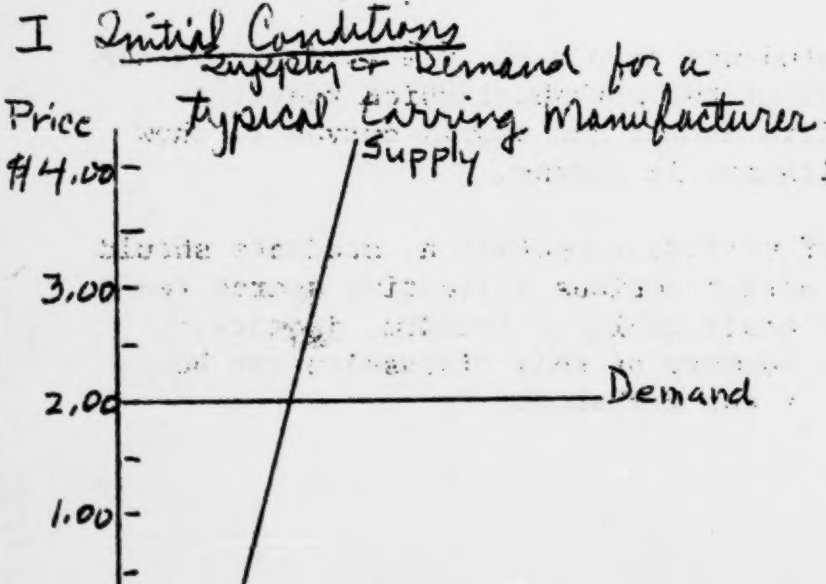
(1) For the first exercise you may want to go through the analysis on pages 37-39 in class, getting students to supply the answers as you complete the problem as a class demonstration.

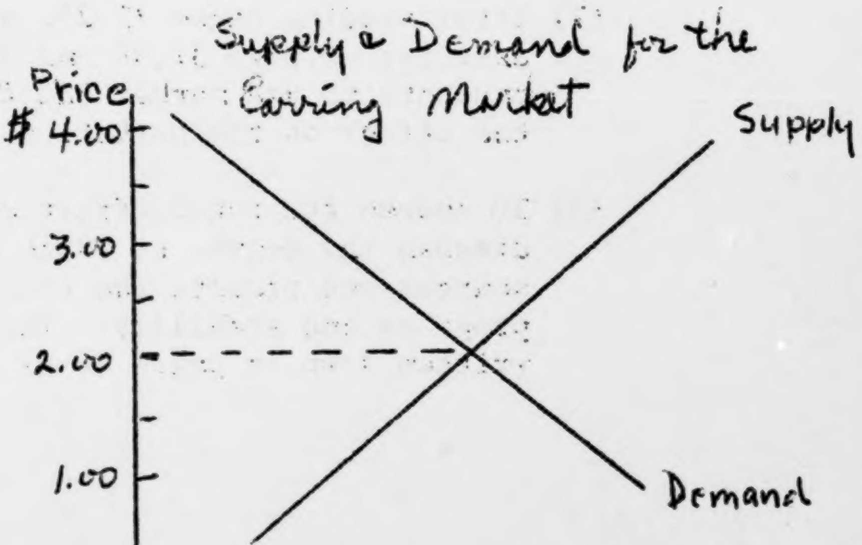
(2) Discussion of the effect of perfect competition on promoting the four basic goals. This should provide a lively discussion, based around four question:
(a) Does perfect competition promote economic freedom?
(b) Does perfect competition promote economic justice?
(c) Does perfect competition promote economic progress?
(d) Does perfect competition promote economic stability?
For each question except the last, these are yes, but make sure the students consider the exceptions.

E. **Worksheet answers**:

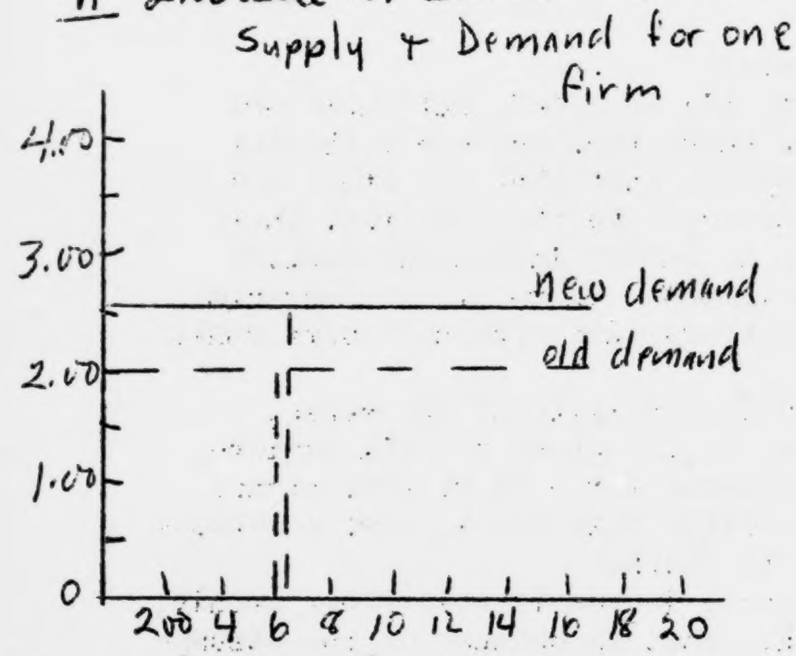
(1) Page 38 and 39. The following diagram shows how the progression of demand and supply shifts and completed diagram on page 38.

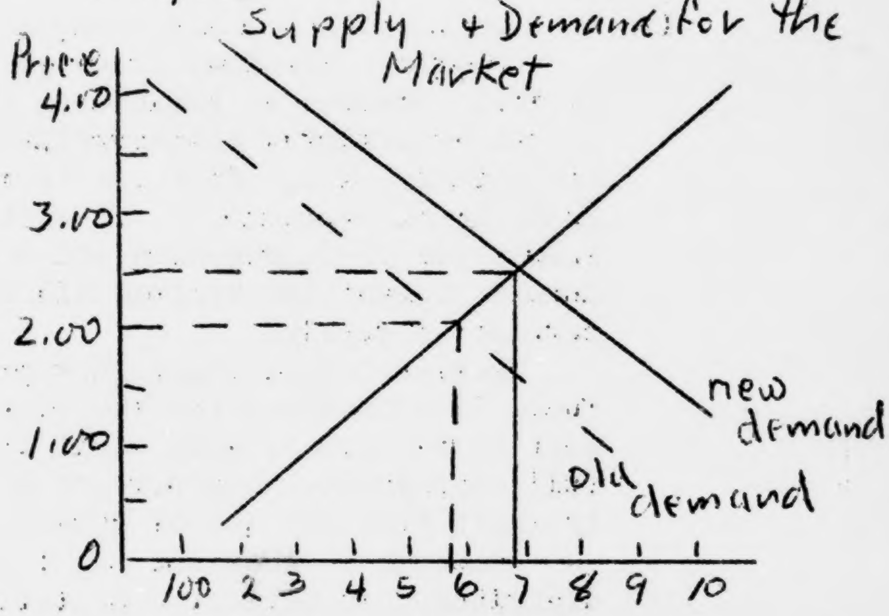
I Initial Conditions



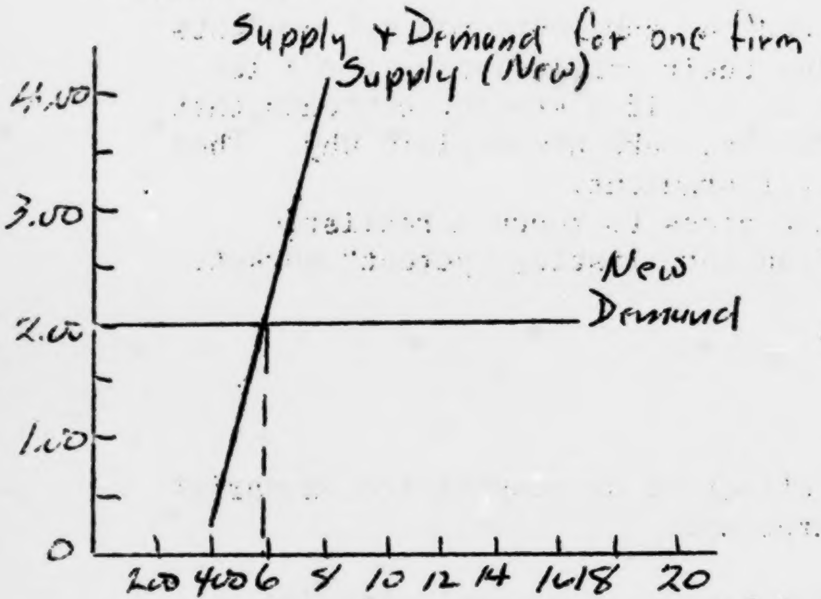


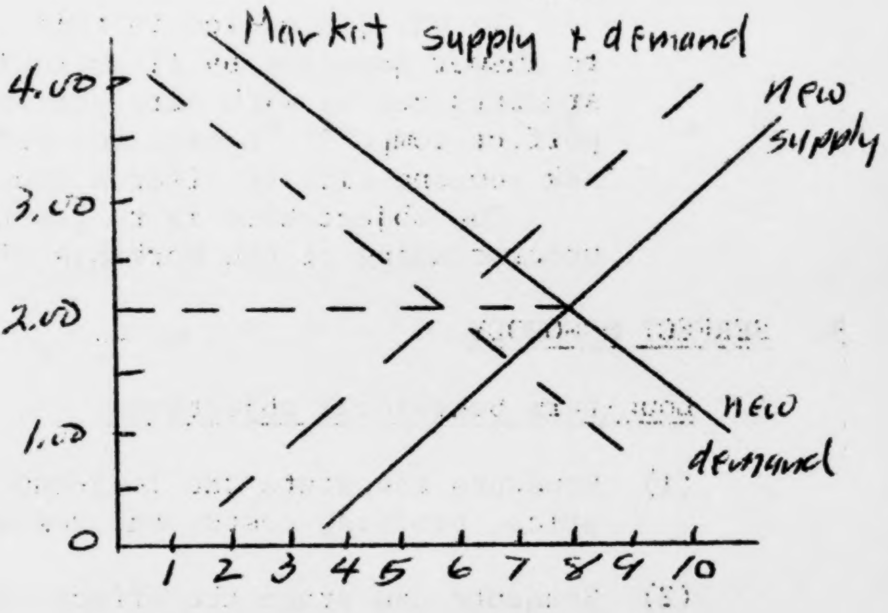
II Increase in Demand (Short-run reaction, existing firms increase output in response to a rise in price).





III Long-run Reaction (New firms enter market + increase supply; this reduces price





after all adjustments are made, the typical firm is producing the same amount as he was before the increase in demand. S + D curves in I + III are identical for the firm but have increased for the market.

(2) Perfect competition and economic goals:

Justice, freedom, progress are all promoted, but there are limits. Freedom is limited in the sense that one man's ability to act is strictly circumscribed by the fact that all other men are equally free. Progress is restricted by the fact that there is no great accumulation of wealth to invest in mass-production industries or in research and development. There are no mass-production industries because all suppliers must make up a very small percent of supply.

Perfect competition does promote stability in one sense. There is a tendency for the economy to run close to full employment at all times, with small variations for a short time around full employment. However, to accomplish this people must constantly shift from one job or business to another.

Counter to what one might assume, income is relatively evenly distributed in perfect competition. This is because of the assumption of freedom of entry into any market. This competition keeps wages, rent, interest, and profits relatively equal in different markets.

In the discussion in this section, make sure you get students to answer question by illustrating their conclusions. don't let students get by with mere yes or no's. If a student contends that perfect competition promotes progress, make him explain why. Then ask someone else to offer a counter argument.

The object here is to get the class to reach a realistic understanding of the workings of an unrealistic, "pefect" market.

9. PERFECT MONOPOLY

A. Long-term behavioral objectives:

(1) Students can state the long-run effect of no competition on market price, profits, costs, and resource use.

(2) Students can state the effect of monopoly on economic freedom, justice, progress and stability. (See content outline for answers).

(3) Students can compare the difference between market conduct in perfect competition and perfect monopoly when by conduct we mean price determination, quantity sold, introduction changes in the quality of the product, and introduction changes in production methods.

(4) For any given difference in market conduct, students can choose which difference in market structure accounts for the difference in conduct. (e.g., profits are higher in monopoly because of the existence of complete barriers to entry into the market.)

B. Experience objectives:

(1) From data on supply and demand conditions for a monopolist students should be able to figure out how the monopolist sets price and quantity sold and should be able to compare this with the perfectly

competitive case. The big difference here is that the monopolist must take into consideration the market demand in deciding how much to sell. It will pay him to restrict output in order to keep price high. Students should discover this for themselves by trying to use the demand and cost data provided in the exercise on page 41 and 42.

(2) Students should reason out what would happen if a competitor did succeed in entering a monopolist's market. Question 3 on page 44 gives students a chance to psych out the reactions. You should make students combat each other, match wits with each other to invenr tatics which Lucy and Linus would use.

(3) Students should draw conclusions about monopoly by analyzing the advantages and disadvantages of monopoly and comparing it with perfect competition. 5, 6, and 7 on pages 45 and 46 do this, but there is some overlap in questions. You may only want to use one of these exercises.

C. Purpose: The purpose of this exercise is to give students a chance to do some theoretical analysis themselves and, thereby, to start to internalze the effect of different competitive conditions on business behavior (conduct). This lesson leads up to the next lesson in which students are introduced to the great diversity of competitive market conditions which exists in the real world.

D. Teaching Strategy: The answers to Part V of the worksheet are given below. There are really three different parts, those outlined in B above. The first part is a puzzle which students must work out and perhaps they can best do this in small groups. Give them 10 minutes to come up with the answer, then start supplying hints until some group gets the answer.

The second part in which Linus enters the market may best be done as a total class discussion, in which students respond to each other's, not to your strategy.

The third part is a summary, perhaps you can assign 4 and 5 on pages 44 and 45 as homework which you collect, then discuss 6 in class to enable students to get an accurate and complete table for number 6 on page 46. For number 7, students should reach conclusions similar to those stated above in the General Purpose of lessons 3-6. Questions 4, 5, and 6 are somewhat repetitive so you may only want to use one of them in class. You could then use one of the others as a quiz question.

E. Answers to worksheet:

Part V

1. The Case of Lucy and The Frosted Freezes

Assume that Lucy wants to make the highest possible total profit. What should she do?

a. Can Lucy set the price? Yes

B. What additional information must Lucy take into consideration in deciding what to do (as compared to the options open to a firm in a perfectly competitive market).

Lucy must recognize that in order to sell more she has to lower price. This is not true of firm in perfect competition where the firm can sell as much as it cares to at the going price. In monopoly, the seller must take the market demand into consideration.

C. Draw Lucy's Supply Curve in Figure 1.
Straight horizontal line at 15¢ or straight vertical line at 84cones/wk.

D. Determine market price and quantity sold.
market price - 15¢
quantity she sells/week - 84
her total profits/week - $9.58
Describe how price is determined: Lucy sets price to make the highest profits, and allows buyers to buy as much as they want, or, alternatively, she could restrict output to 84 cones. In this case, the price would settle at 15¢.
Describe how quantity sold is determined:
If Lucy sets price, demand sets quantity sold. If Lucy sets quantity, the demand side of the market competes to set price.

2. In the case presented above, Lucy is in a very good position to exploit her monopoly, because of the peculiar nature of the demand for Frosted Freezes. Below, you are given another demand schedule for Frosty Freezes in the Peanut's market. Complete the columns of the table to calculate Lucy's best output and price, assuming she is a monopolist operating under these demand conditions, and the cost conditions shown in Table II.

Table III

price/cone	quantity demanded per week	Total revenue	Total Costs	Total Profit
5¢	127	6.35	4.80	
6	123	7.38	4.70	
7	119	8.33	4.57	
8	114	9.12	4.42	
9	109	9.81	4.27	5.54
10	103	10.30	4.09	6.21
11	93	10.23	3.38	6.85 *
12	83	9.96	3.23	6.73
13	72	9.36	3.17	6.19
14	61	8.54	3.11	5.43
15	50	7.50	3.02	4.48

a. Lucy will sell 93 cones per week at a price of 11¢ per cone, and she will make a total profit equal to $6.85 .

b. Describe the difference between the two demand schedules. Why does the first demand schedule allow Lucy to make higher profits and charge a higher price?

It is inelastic throughout. This means it pays to sell at highest price because at a higher price less is sold so costs are lower but revenue gets larger, the higher the price. The monopolist wins both ways. At a low output costs are low and revenue high.

c. What does this suggest about the ability of a monopolist to exploit his monopoly power? ans. The more inelastic demand, the greater his ability to make high profits by restricting output.

3. What happens if someone -- Linus -- decides to start selling Frosted freezes in competition with Lucy? (Better start assuming that the initial cost of entry is $5.00 for necessary capital goods which have an average life of 10 weeks).

a. Can two businesses produce in this market and still make profits? (Use the demand shown in Table II as the market demand). - Yes

b. Assume Linus's costs are the same as Lucy's (that is, he uses the same production techniques as Lucy). What ways would he use to compete with Lucy? - He would sell cones at a lower price, advertise, give better service.

c. How would Linus's competition affect Lucy's demand curve (schedule)? It would shift to the left, her demand would decline.

d. How would Linus's competition affect Lucy's profits? - They would be reduced.

e. What actions do you think Lucy might take, following Linus's entry into the market? - She would cut prices below the level which would bring in any profit at all, and eventually force Linus out of business. If this fails, she might try to make a deal (Students might come up with many possibilities here, the more specific the better).

4. Why are there monopolies and markets with a relatively few sellers? List as many reasons as you can.

a. natural monopolies:
   (1) the firm controls 100% of an essential input
   (2) the most efficient sized firm can easily supply the total market
b. Government protected monopolies
   (1) tariffs
   (2) patents
   (3) government franchises or protected from competition
c. Overt tatics by monopolist to exclude competition

5. Are monopolies beneficial to the public? State both yes and no answers to this question.

Disadvantages

a. The public pays a higher price for less output than would be produced under more competitive conditions.

b. There is no assurance that a monopolist will act in the public interest unless it is profitable to do so, because of the lack of competition. So the monopolist may use price discrimination, may retard the introduction of new discoveries

c. May deliberately restrict freedom of entry and thereby the economic freedom of others.

Advantages

a. May use profits to develop a better product or means of production.
b. May be most efficient to have only one firm.

6. Use the table below to summarize the differences between perfect competition and perfect monopoly. Complete the table for the case of pure monopoly.

MARKET CHARACTERISTICS (Supply & Demand Conditions)	MARKET CONDUCT (Price Determination, of competition between firms)	MARKET LONG-RUN PERFORMANCE
PERFECT COMPETITION		
1. Very large no. of firms.	1. Firms cannot set price, they can only adjust production to try to get the highest profit.	1.The price equals cost of production and a normal profit.
2. No large sized firms - no firms have any control over demand conditions. The firm's demand curve is a horizontal line.	2. Whenever profits are abnormally high, new firms enter production.	2. Profits are just high enough to keep firms producing, but not high enough to induce new firms to enter the industry.
3. Each firm produces a product which is idential to that produced by his competitors.	3. Firms copy each other's inventions.	3. Firms produce output using the most efficient means of production.

PERFECT MONOPOLY - Please go on to the next page.

PERFECT MONOPOLY

Market Characteristics	Market Conduct	Market long-run Performance
1. One seller 2. Complete barriers to entry	1. Monopolist sets price or output at a level which gives him the highest profit 2. Can use price discrimination 3. The firm introduces improvements in the product and in the techniques of production so as to make the highest profit. e.g., a monopolist may not substitute new techniques until the old equipment is worn out. 4. May try to exclude competitors through pricing policy, gov't. protection, buying out competitors.	1. Price & profits are higher than they would be under comparable conditions in perfect competition. 2. Firm restricts output. 3. Long-run excess capacity may persist(idle capital) 4. May not produce output as efficiently as possible. 5. May spend profits on research and development, but is not necessarily compelled through competition to introduce these discoveries.

7. If you had your choice, which kind of world would you prefer -- Perfect Competition, or Perfect Monopoly?

UNIT II

LESSON 7

INDUSTRY MARKET STRUCTURE AND TYPES OF MARKETS

2 DAYS

Instructor's Materials

1. Purpose of lesson
2. Content Outline
3. Prerequisite Behavioral Objectives
4. Long-Term Behavioral Objectives
5. Experience Objectives
6. Notes on Teaching Strategy
7. Bibliography

Student Materials

1. Program on Market Structure

(2) The firm builds a small plant, in which case cost per unit is higher than that of competitors, reducing chances of earning adequate profits.

b. Capital requirements of entry and staying in the industry. (Supply conditions) Initial cost of entry depends on the size operation required to take advantage of economies of scale, on the money required to meet losses for the first years until the firm has obtained a profitable share of the market - the importance of advertising and research and development to successfully compete in the market. If there are high costs of this sort, long-run investments in advertising and research and development must be incurred for several years before there is a pay-off.

c. Control of essential resources and absolute cost disadvantages.

(1) If existing firms control raw materials, the personnel with managerial or inventive skill, early stages of production, it may be difficult for a new competitor to get command of these inputs at low enough prices to make a profit.

(2) If existing firms have patents, it is necessary to pay for the use of them, or it may be impossible to get permission to use the patented processes at all.

(3) In these cases the new firm is at an absolute cost disadvantage. It must pay higher prices or use inferior inputs at the going prices, and cost per unit will be high even with a size plant which permits full economies of scale.

d. Degree of product differentiation. (demand conditions) To the extent that the suppliers can distinguish their product from that of their competitors, they can build up consumer loyalty. The possibility of product differentiation usually creates a barrier to entry because it is more difficult and costly for new firms to pry away customers from established firms.

3. Product Differentiation. The degree of product differentiation - whether or not the product is standardized - is also a major structural characteristic of an industry.

a. Product differentiation describes a demand condition. Usually, in markets selling final products or services to consumers, the product is differentiated. Personal services are, by definition, differentiated.

b. Product differentiation refers to the consumer's reaction to differences in the product or service of different competitors, not to the physical characteristics of the output. The output produced by two competitors may actually be indistinguishable in physical characteristics. If the consumer considers them different, the product is a differentiated product.

4. Price elasticity of demand for the output of a given supplier.

   A. High price elasticity (price responsiveness) means that there are close substitutes and that the firm has little control over price.

   B. Generally, the greater the market concentration, and uniformity of product, the greater is price elasticity. Price elasticity is a measure of market control.

   C. This is a demand condition.

5. Growth in demand for product. This is a demand condition.

6. Market Conduct: The competitive behavior or policies of firms in the market. There are three types of business policies of particular interest.

   A. Price competition: price policies toward setting price.

      1. How is price determined?
      2. How often do prices change? Are prices flexible, do they change whenever supply and demand conditions change?

   B. Non-price competition: policies of firms toward setting the quality of the product.
   Is product policy influenced by attempts to differentiate the product?
      1. through advertising
      2. packaging
      3. model changes
      4. model lines
      5. provision of services

      (1) How frequently and how much change is there in quality?

   C. Policies to coerce rivals or to exclude competitors.

      1. Is there preditory price cutting and price discrimination?

      2. Are there barriers to entry from vertical integration of firms? (New firms must buy semi-finished materials from the established firms and force a price squeeze?)

      3. Is there government protection of existing firms from new competition?

      4. Is there collusion between existing firms to keep new firms out?

GENERAL PURPOSE

1. Students learn how to classify real markets into three types of imperfectly competitive market types on the basis of three demand and supply characteristics.

2. Students survey some facts about specific U.S. industries and about market concentration in the U.S.

3. Students conclude that most U.S. markets are somewhere between the two extremes of perfect competition and perfect monopoly, and that oligopoly markets are prevelent.

CONTENT OUTLINE

I. Introduction to Industrial Organization: A method of studying industries. The three sets of industry characteristics to study:

A. Market Structure: The supply and demand conditions (competitive conditions) which exist in a given market. There are five major types of conditions which are studied. They are interrelated, but it is useful to separate them.

1. Market concentration: Market concentration measures the extent of competition in the market. By concentration we mean the number of firms supplying the market, and the relative importance of the largest firms.

a. Market concentration is a supply condition.
b. Market concentration is often measured by using concentration ratios. A concentration ratio is the per cent of output supplied by the largest four firms in the market. The higher the concentration ratio, the greater the market concentration.

2. Barriers to Entry: Any conditions existing in the market which make it difficult for new firms to enter production. Barriers to entry exist because of both supply and demand conditions in the market. There are four important kinds of barriers to entry:

a. The existence of economies of scale. (Supply conditions) Economies of scale exist when cost per unit of producing the output declines as the size (scale) of the plant or firm increases. The existence of mass production techniques in an industry means the existence of economies of scale. Economies of scale can inhibit new firms because:
(1) the new firm must either build a plant big enough to take advantage of these economies, in which case, a very large capital investment is required to permit construction of this size plant;

7. Market Performance: The long-run consequences of market competition and conduct in the industry. To what extent does the market performance promote the economic goals of economic justice, freedom, progress and stability?

   A. The main direct effect of market operation directly affects all of these goals, but the most important relation to examine is the relation between market organization and economic progress.

   B. How efficiently does the market allocate resources?

   C. How progressive is the industry in introducing improved quality and more productive techniques of production?

II. Types of Markets

   A. Markets are categorized into 5 main types of markets, according to the first three market structure characteristics (concentration, barriers to entry, product differntiation).

      1. Perfect competition (actually, economists distinguish between perfect and pure competition, it is not necessary for us to make the distinction, but if you wish to read about it, look at Samuelson).

      2. Monopolistic Competition

      3. Oligopoly with standardized product

      4. Oligopoly with differentiated product

      5. Perfect Monopoly

   B. Three market types are listed according to degree of market power. Generally speaking, market power of firms increases as these three structural characteristics approach perfect monopoly market structure conditions. The table on page 40 of the student's program summarizes the market classification system used here.

   C. This classification system is arbitrary. Other people use other classifications. For instance,

      1. Divide markets into perfect competition, imperfect competition, and perfect monopoly. This is a useful distinction, but almost all real markets would be classified as cases of imperfect competition, This distinction does not allow us enough leeway in distinguishing between different real markets.

      2. Divide markets into eight categories, all the combinations of the first three market characteristic categories. This allows us to distinguish between markets with effective barriers to entry and those with ineffective barriers. Thus, we would have two kinds of monopolistic competition.

D. A real market usually does not fit perfectly into one of these classifications. If it does, there are other distinguishing market structure characteristics of the market which make it unique. Thus, the classification of two markets as monopolistic competition, does not mean that the two markets have the same market structure. Do not think of the classes as real. They are types or models, useful for purposes of comparison.

Prerequisite Behavioral Objectives

The proficient student is one who:

1. Inserts in a matrix
   - a. the names of the five types of market discussed,
   - b. the names of the three major characteristics (i.e. concentration, barriers to entry, and product differentiation),
   - c. states the degree of each characteristic present for each type of market

2. Given examples of two or more familiar products, states which has the highest elasticity.

3. Given statements, true and false, identifies that (those) which is (are) an accurate example (s) of price elasticity.

4. Given statements, identifies that which correctly states the relationship between growth rate and concentration.

Long-term Behavioral Objectives

1. Names the five types of market discussed.

2. Names the three major characteristics discussed.

3. Given a description of the characteristics of a market type, names the market.

4. Given the name of a market, names the characteristics of that market.

5. Given the names of two or more market types, states which is (a) closest, and (b) most removed from pure monopoly.

6. Given data on a market type (e.g., the cigarette or steel industries), identifies the degree of the three major characteristics present and classifies the market as to type.

7. Given the names of two or more market types, states which has the greatest market power, and can state in writing why.

Experience Objectives

When he as completed the worksheet, the student will have done the following:

1. Identified the three characteristics as they are present in
   a. perfect competition
   b. perfect monopoly
   c. monopolistic competition
   d. oligopolies No. 1 and No. 2

2. Completed a table showing the characteristics of the five market types discussed.

3. Given characteristics, identified type of market described.

4. Given examples, identified type of market described.

5. Identified the relationship between market power and degree of monopoly.

6. Identified the relationship between product differentiation and market power.

7. Identified the relationship between market power and the growth rate of demand.

8. Identified the relationships between price elasticity and
   a. ease of substitution,
   b. absolute price.

A ceriteria test is provided to enable you and the students to find out how successful students were in achieving the lesson objectives.

Teaching Strategy

It is probably important to discuss the implications of what they have learned. None of the markets fit the "perfect" models. What does this mean as far as business conduct in these industries is concerned? Do these industries operate in the public interest? How do they operate? The object of Lesson 8 is to study a few industries in depth to arrive at some hypotheses about the efficiency of industrial organization.

BIBLIOGRAPHY

1. Richard Caves, American Industry: Structure, Conduct, Performance. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964. In the Foundations of Modern Economics Series. This is a 114 page paperback summary of industrial organization, showing how to use the three-way distinction between industry structure, conduct and performance. It also summarizes government regulation of industry and the use of anti-trust laws to control monopoly. There are no case studies, illustrative material is limited to short examples. The book is clear and interesting to read. It has a good bibliography of the field on pages 113-114.

2. Leonard Weiss, Economics and American Industry, third edition. New York: Wiley, 1961 This is a textbook on price theory which teaches market behavior in different types of markets through the analysis of case studies. Both the theoretical analysis of types of markets and the case studies are highly instructive. Chapter 1 is a good introduction to the statistical evidence on the organization of American Industry today.

3. Alchian and Allen, University Economics . Belmont, California: Wadsworth Publishing Company, Inc., 1964. This is a principles text in economics which emphasizes microeconomics and the study of micro theory through the study of specific markets. The book is more difficult than the others cited here, but it is highly informative if you can use the theory.

4. Walter Adams. The Structure of American Industry. third edition New York: Macmillan and Company, Inc., 1961 This is a book of case studies of specific industries, and the case studies make use of the structure, conduct, and performance breakdown described by Caves. This book is highly informative and readible. Better students could read and use this book as a reference. It is available in paperback.

UNIT II
LESSON NO. 8
3 WEEKS

INDUSTRY CASE STUDIES

Instructors' Materials

1. Purpose of Lesson
2. Experience Objectives
3. Prerequisite Behavioral Objectives
4. Long-term Behavioral Objectives
5. How to Study an Industry
6. Notes on Lesson Design and A Suggested Teaching Strategy
7. Notes on the Individual Case Studies*
8. Teacher's Essay on the Aluminum Industry
9. Teacher's Essay on the Automobile Industry
10. Teacher's Essay on the Telephone Industry*
11. Bibliography

Audio-Visual Materials

1. Introductory ten minute film on the aluminum industry history and stages of production.*
2. Overhead transparencies of data on industry structure, conduct and performance for the aluminum, automobile* and telephone industries.*

Student Materials

1. Readings and data on the Aluminum industry structure; data on industry performance.
2. Readings on the history and industry structure of the automobile industry and data on industry structure and performance.
3. Readings on the history and industry structure of the telephone industry; data on industry structure and performance.*

* These materials will not be ready until June, 1966.

PURPOSE OF LESSON

Two main objectives of this lesson are: (1) to give students a chance to study fairly carefully a group of industries illustrative of different forms of market competition, and (2) to allow students to compare these industries and to use this comparison to state certain hypotheses about the operation of the U.S. market system. (The word hypotheses is used instead of conclusions because our intention is to allow students to practice using data to make theoretical (scientific) conclusions which, by their nature, are tentative and subject to further empirical testing. A primary function of the teacher should be to help students learn to base hypotheses on evidence---all of the evidence--and to guard against over-generalization.)

The third main objective of this lesson is for students to develop two important attitudes: (1) scientific procedures can be and should be used to study the operation of the market system and the solution of problems related to improving the effectiveness of market operation, (2) all scientific conclusions are based on evidence and are tentative; they are subject to further empirical testing and to revision whenever conflicting evidence is uncovered. The good scientist is a humble man.

EXPERIENCE OBJECTIVES

In this lesson students study the structure, conduct and performance of three industries -- primary aluminum and fabricated aluminum products, automobile manufacture, and telephone service. They compare these industries and make inferences about U.S. industry structure and the operation of the market system in the U.S. This lesson is designed to serve the following purposes:

1. To provide students with some concrete examples of how the market system works in the U.S. through studying industry organization and competition in specific industries.

2. To give students enough background about a group of industries to enable them to understand the justification, importance, and limitations of anti-trust and public regulation of industry.

3. To enable students to use some simple tools of analysis developed by economists to study markets and industries, involving analysis of industry structure, conduct and performance.

4. To give students experience using factual evidence and rational decision making procedures by requiring students to predict industry competitive behavior under different kinds of market conditions.

5. To give students some insight into business behavior and the effect of competitive pressures by requiring them to make business decisions themselves.

6. To give students practice analyzing economic data using graphs and tables.

7. To enable students to form a set of conclusions about the U.S. market system, the nature of competition, the effects of competition on resource allocation and purposes. These conclusions should be based on factual evidence and the students' experience in carrying on the industry studies. These conclusions should be the basis for developing rational attitudes about the operation of the U.S. market system.

    a. Competition differs widely between industries because of differing market conditions (market structure).

    b. Oligopoly markets are important in our economy because of the importance of mass production and because of the history of competition in specific industries.

    c. The market structure which is best for the public in a given industry depends to a large extent on the nature of the product and on the most efficient methods of producing it.

    d. Although monopoly and oligopoly markets have similar market structure characteristics, there are substantial differences in market conduct and performance. Oligopolist competitors must recognize the impact of their actions on their rivals, and thus on the market as a whole.

This mutual interdependence between competitors in an oligopoly market makes it difficult for management to determine what policy is best in any given situation. Therefore, it is difficult to predict competitors' actions.

e. Because non-price competition is very important in selling a differentiated product in oligopoly markets, there is a considerable difference between the conduct and performance of type 1 and type 2 oligopolies.

f. The reasons for government intervention in markets are to protect consumers from restriction of output and high prices, and competitors from acts of coercion in oligopoly and monopoly markets.

g. The most effective way to effect a permanent change in industry conduct and performance is to alter industry market structure. However, this is not always easy to do. Two examples will illustrate this. The increased competition in the aluminum industry since World War II is a result of deliberate Federal government action to alter market structure by encouraging entry of new firms. The current government investigation of auto safety is an investigation of industry conduct. The most likely result of this public furor will be some improvement in auto safety. How permanent will be this change will depend on the law, or on industry concern. Because there will be no change in the competitive structure of the industry there can be no assurance that the condition will not recur.

PREREQUISITE BEHAVIORAL OBJECTIVES

1. From alternatives, students can recognize the definitions of and the differences between the following groups of terms:

   a. economies of scale, absolute cost advantage;
   b. product differentiation, standardized product;
   c. elasticity of demand, growth in demand;
   d. market structure, market conduct, market performance.

   With respect to "d", students should recognize from alternatives that market structure means market supply and demand conditions; that market conduct means competitive behavior related to price competition, product competition and coercive conduct; that market performance is the long-run level and changes in profits, prices, costs, quality of product, inventions.

2. With respect to a,b, and c, in objective 1. above, students should also be able to choose from alternative examples the one which is an example of one of the categories, e.g., cigarettes is a differentiated product.

3. Given a list of examples of market structure, conduct and performance for specific industries, students can classify the bahvior into the three categories. For example, the items in the list shown in column 1 below should be classified as shown in column 2.

Column 1 Industry Data or Behavior	Column 2 Type of Industry Characteristic
The annual profit rates for GM from 1940 - 1960.	performance
The average operation level of Ford Motor Co. in 1965 (% of capital equipment used)	performance
Introduction of a new model Singer sewing machine	conduct
Supermarket raises the price of Hill Bros. coffee	conduct
There are 50 supermarkets in Stockton, Calif.	structure
Proctor and Gamble spend $25,000,000 on TV advertising	conduct
The average increase in auto sales in the U.S. is 5% per year in the last twenty years	structure
A 2% increase in gasoline prices causes a 1% drop in gallons sold	structure
One factory can produce efficiently all the tires demanded in the U.S.	structure

4. Given a description of the market structure of a given industry, students can classify the information into the five major market structure characteristics--market concentration, barriers to entry, product differentiation, demand elasticity and growth in demand, and be able to place the characteristics which go into more than one category in all appropriate categories. For each item will indicate whether it is a demand or supply characteristic.

LONG-TERM BEHAVIORAL OBJECTIVES

1. Given data on the structure of a given industry, students can predict industry conduct--the pricing policies, the type of product competition, and the existence of coercive tactics against competitors.

2. Given data on industry price competition or product competition conduct, students can predict industry performance--long-run efficiency of resource allocation and the progressiveness of the industry.

3. Given knowledge about the industry's structure and performance, and given industry conditions in either the auto, telephone, or aluminum industry at a particular point in time, students can decide on a pricing or product policy and can justify their decision through correct use of the data provided in the problem. In this problem, the criteria for a correct answer is the ability of the student to make a decision based on a logical consideration of all given market conditions. There may be several possible actions which would be appropriate, given the stated circumstances.

4. Given data on performance for one of the three industries, students can use the given evidence to evaluate the degree to which the industry operates in the public interest, and can then cite the market structure characteristics which account for each performance characteristic.

5. After all three industry studies are complete, and after class discussion to draw conclusions about the operation of the U.S. market system, students can write a paragraph answering at least two of the following questions. They can answer multiple-choice questions bearing on the answers to the remaining questions:

   a. In many important sectors of the U.S. economy, the demand and supply conditions are closer to conditions of monopoly than to conditions of perfect competition. Give at least four reasons and illustrate each, using your knowledge of the six industries studied in lessons 7 and 8. Answers should be based on these six points:

      (a) there is a differentiated product, which means that each producer has some control over buyers--there is some consumer loyalty. This consumer loyalty may often be based on advertising, packaging and superficial model differences.

      (b) the prevalence of mass production techniques means high costs of starting a business.

      (c) mass production techniques means national markets for many products.

      (d) mass production means that demand is not big enough to permit a large number of sellers.

      (e) mass production means that new firms in a concentrated industry are at an absolute cost disadvantage because the established firms have all the know-how and talent.

(f) there is government protection of monopoly power in some instances.

b. Is there really any difference between industry conduct and performance in monopoly and oligopoly markets?

Ans: There is more competition in an oligopoly market. In an oligopoly market, before a firm can take action regarding price or non-price competition, the firm must assess the effect of this action on competitors and on the total market. Because of the mutual interdependence of competitors in an oligopoly market, it is more difficult to predict the effect of a given policy. This uncertainty about the results of engaging in competition leads to rigid prices and infrequent but sometimes violent price competition in the form of a price war or undercover discounts to customers. Nonprice competition is more common.

The monopolist has more freedom to alter price to maximize profits, and is under less pressure to engage in nonprice competition. The monopolist's competition comes from firms in other industries, and for this kind of competition the primary competitive tactic is to use price discrimination to break into the new use for the monopolistic product.

c. Is competition always beneficial to the public?

Ans: No. Nonprice competition is not necessarily beneficial since it results in high advertising, selling costs, and costs of changing models. In addition, easy entry into an industry may result in there being too many firms to enable all firms to produce at optimum capacity. Excess capacity exists. This is common in monopolistic competition and in some oligopoly markets. Finally, constant price wars and business failures can result in the deterioration of service to the public. The existence of "ruinous" competition in industries, such as trucking and airline transportation in the 1930's, led to government regulation of competition to restrict entry and to stabilize the industry.

d. Is there an ideal type of market which best protects the interests of consumers? Give a complete justification for your answer.

Ans: Students should reply no; that the appropriate industry structure varies from market to market, depending on the nature of the product and the methods of production. Assuming that the market can allow many firms to produce efficiently, competition between a large number of firms is usually in the public interest. There are cases where economies of scale do not permit this. Students should cite aluminum and auto manufacturing here, and they should recognize that the auto industry could support more firms if it were not for the fact that the product is sold to consumers and that, therefore, production differentiation is important.

If students champion pure competition, they are being unrealistic, because the market structure conditions for pure competition do not exist in many industries.

e. Should we favor the promotion of free enterprise as a national goal if by that phrase we mean nongovernmental interference in industry organization and control? Substantiate your opinion by using factual evidence or conclusions drawn from economic theory.

Ans: This question requires students to develop a logical argument to substantiate their own opinions. Students may answer yes or no to this question, depending on their own attitudes about economic freedom versus other economic goals. Their answer should be consistent with their own expressed values. If students are not in favor of government control, they should be able to trace the effects of no control, and justify the refusal to resort to government control.

If students favor both nongovernmental intervention and competition, their best argument is that although there may be more monopoly markets without government control of monopoly, these monopolists will be competing with each other, and this competition will provide adequate protection for the consumer. This contention is popular, but, of course, it should be substantiated empirically. The effectiveness of inter-industry competition in controlling a monopolist depends on how close substitutes the two products are.

An argument against public regulation of monopoly is that the government actually creates the monopoly by excluding competition, and then the public regulatory agency is ineffective in controlling the industry. There is substantial evidence on both sides of this question. The argument is good in the sense that it provides a good, testable hypothesis on which to base a study of a regulated industry.

f. Should the government break up highly concentrated industries by forcing large firms to sell stocks in subsidiary corporations (or by some other procedure to reduce the market share of the largest sellers)?

Ans: Again, the answer the student gives depends on his values. If a student is in favor of breaking up industrial giants under almost any circumstances, his reason must be primarily noneconomie, e.g., he does not favor large concentrations of power.

If the student's concern is primarily economic,(his goal of public policy is to assure an efficiently operated industry) then he should answer that the need for a larger number of competitors depends on the structural characteristics of that industry. In order to make such a decision, a careful industry study would have to be made.

g. How would an economist advise the Justice Department or Congress about how to decide whether or not the government should intervene in the activities or organization of an industry? Answer: Study the structure, conduct and performance of the industry. Evaluate the effects of alternative changes in market organization or government control of the market.

HOW TO STUDY THE OPERATION OF AN INDUSTRY

In this lesson students study and compare three industries. The following steps are involved in carrying out an industry study (industrial organization is the term usually used to describe this type of emperical-theoretical analysis of an industry):

I. Collect and analyze basic data about the industry to determine how competition works in the industry. This involves finding out the following:

A. Industry structure:

(1) What markets or subsectors compose the industry?
- a) What are the stages of production?
- b) What kind of vertical or horizontal integration exists in the industry?
- c) What is the geographic extent of the market or markets which compose the industry?

(2) What is the market structure of the market(s) in this industry?
- a) Market concentration--what are the numbers and relative sizes of the firms?
- b) Barriers to entry--Do the following types of barriers exist: economics of scale; absolute cost barriers; product differentiation; legal restrictions to entry or protection of established firms?
- c) Product differentiation--Can advertising, packaging, model changes affect sales?
- d) Demand elasticity--Are there close substitutes for the product(s) produced in the industry?--in the short and long run, for longstanding and potential customers?
- e) Demand growth and fluctuation--Is demand growing rapidly? How much is industry demand affected by changes in general business conditions (business cycles)? Does demand for the product(s) fluctuate periodically (daily, weekly monthly, seasonally)?

B. Market competitive conduct:

(1) How much price competition exists in the industry?
- a) How is price determined--to what extent can firms set their price; how much leeway do they have to raise or lower prices away from prices charged by competitors?
- b) How similar are prices quoted by different firms in the industry? Are they identical, or is there variation? How much?
- c) Do competitors collude to fix prices and to deliberately eliminate price competition?
- d) Are prices flexible? How often do prices of industry products change?
- e) Do firms practice price discrimination?

(2) What kind of nonprice (product) competition exists?
- a) What kinds of advertising and selling costs exist? How large a percentage of total sales do they make up?

b) Are packaging or services important? What percentage of sales do they make up?
c) Are there model ines produced by firms which sell the basic product at different levels of quality?
d) Are there frequent model changes? How extensive are model changes? What percentage of total sales do costs of model changes make up?
e) Are there large research and development expenditures to improve the product(s)?

(3) Do large firms coerce existing competitors or exclude potential competitors from competing in the industry?
   a) Do large firms use price cuts or price discrimination to take any business from competitors?
   b) Do vertically integrated firms use price squeezes to force independent firms into line? Do they charge high prices to independents and sell the final product at a low mark-up?
   c) Do firms attempt to buy up competitors?
   d) Do firms receive government protection from potential entrance of new competitors?

C. Market Performance

(1) How successfully does the industry allocate resources to conform to consumer demand?
   a) Are there long-run excess profits?
   b) Do prices change frequently in response to changes in supply and demand?
   c) Do firms produce at the lowest possible cost?
      1. Do they use the optimum scale of operation?
      2. Do they generally produce at close to 100% capacity?
      3. Do they substitute factors of production when relative prices of factors of production change?
      4. Is there waste in production techniques?

(2) Is the industry progressive?
   a) Is there a large investment in research and development?
   b) Is there a large increase in productivity through time? Is this increasing productivity reflected in declining prices over time?
   c) Are there continual improvements in the quality of the product(s)?
   d) Is there much lag between invention and introduction (innovation) of new products, new production techniques or improvements in products?

II. Evaluate the industry's performance. How well does industry competition (both between competitors in the industry and between competing industries) work to promote industry and/or public welfare?

A. What are the industry's good and bad performance characteristics---
   1. from the point of view of industry welfare for both large and small firms; and 2. from the point of view of public welfare?

B. To what extent doeswhat is good for the industry coincide with what is good for the public? That is, are the same performance characteristics"good" or "bad" from both points of view?

III. What changes in industry structure, conduct and performance will occur in the near future? Are they in the public interest?

IV. Are there any performance characteristics which should be changed to promote the public welfare? How can they be changed?

A. Study the relation between industry structure, conduct and performance to determine alternative ways of changing industry performance. Industry performance is the result of industry conduct, and industry conduct is affected by industry structure. This means that industry performance can be altered two ways:

(1) Force the firms in the industry to change their conduct by legislation or other regulation.

(2) Change market structure and thereby competitive conditions which promote the undesirable conduct.

NOTES ON LESSON DESIGN AND A SUGGESTED TEACHING STRATEGY

Use of more than one industry case study: Students should study at least three industries to enable them to discover the diversity of existing competitive conditions and to enable them to compare different types of industries with the objective of forming some generalizations about industry organization and and market operation.

Choice of Industries: The industries were chosen to illustrate important and interesting general market types. The aluminum industry was a monopoly before World War II and is now a type 1 oligopoly market (standardized product). The industry is growing rapidly; until recently prices have been dropping; new firms have continued to enter the industry up to the present time, and by most standards the industry's performance record has been very good.

The automobile industry is the most important industry in the world; it is a prime example of a type 2 oligopoly (differentiated product), even though in its early history the industry was highly competitive. Its largest firm is the largest and one of the most profitable corporations in the world. While we might not all agree that what's good for General Motors is good for the country, most economists agree that if things go bad for General Motors, they are also going bad for much of the rest of the economy. This interrelation between the health of the automobile industry and the health of the country is a primary reason for studying the industry.

The telephone industry is our prime example of a government protected and regulated monopoly. It is an industry highly dependent on technological advance, and truly part of the electronic age of instant communication, and it is an industry which the public has trouble loving. Who hasn't had at least one tiff with one's local telephone company representative and felt a welling indignation over the mistreatment at the hands of "Mother Bell?" This study may at least put the problems of the industry in perspective, and may even soften the hearts of the anti-digit dialers.

There are no case studies of highly competitive markets, and some time should be spent on such markets. Students should be able to make hypotheses about competitive behavior in such industries from what they learned about monopolistic competition market structure in lesson 7.

Assignments of the industry studies: There are many ways to carry out the industry studies. The total class can study all three industries together; the total class can study one industry together and break up into groups to study the others--each group studies one industry. Students can choose the industry they want to study, and do their work individually.

The procedures suggested below are based on the whole class studying all three industries. The main reason for this is to allow the teacher to direct most of the class activity. However, a more student-centered lesson may be desirable.

1. General introduction to arouse student interest:
It is necessary to establish the importance of the industry and the existence of interesting public or private controversies over industry organization, conduct or performance. We suggest two ways to do this, both of which might be necessary.

   A. History of the Industry:
   For the aluminum industry we have prepared a ten minute film describing the rather spectacular history of the industry and the problems involved in producing aluminum (the major stages of production). A film or readings on the history of the industry, whatever the industry, should be a useful introduction if the reading or film is captivating. In addition, the industry history provides useful background information about industry production techniques and market competition.

   B. Library Research on Major Industry Controversils:
   Require students to spend one day in the library finding out about the industry. We suggest the following questions:

   (1) In the past one to three years (depending on what's going on at present you probably won't have to go back as far as 3 years) has there been any criticism of the industry or of firms in the industry.
      a. For each case, what is (was) the controversy about?

      b. Who are the parties in the controversy?

      c. How is the controversy being, or how was it resolved?

   (2) In the past three years has there been any other newsworthy aspect of this industry's activities? Describe them.

   (3) What data can you gather on industry structure - demand and supply conditions?
      a. market concentration

      b. barriers to entry

      c. product differentiation

      d. demand elasticity

      e. growth or fluctuations in demand

   There are several sources of information: Fortune, The Congressional Digest, Barrons, The Wall Street Journal, Financial Section of any paper but particularly of the Sunday New York Times, Newsweek, Time, Business Week, U.S. News and World Report, National Guardian, New Republic and Nation to name a few. Fortune, The Wall Street Journal, Barrons, the New York Times and Business Week are probably the best sources of information. However, it is important for students to read similar accounts of the same controversy from several sources, particularly from somewhat left of center and right of center publications. It may even be wise for you to reproduce editorial opinions on controversies from different points of view.

Unless the students get really fascinated don't let this library research take too long. The objective is for the class to list the major policy issues involving this industry confronting the firms in the industry or the public. Once you have this list of issues, the class has a purpose in studying the industry -- to resolve the conflicts, or atleast to study the advantages and disadvantages of alternative solutions.

We suggest that students compile data on industry structure just as a way of making them aware that parties to a dispute use such data, and to give students experience describing industry structure - the five types of supply and demand conditions.

2. Analysis of Industry Structure:
   a. Data Gathering by students: As part of their library research, students will collect some data on industry structure. Do not require too careful a job of students, because it is improbably that they can obtain enough good data from secondary sources to satisfy the need for data on industry structure.

   b. Teacher Lecture: Instead of requiring students to gather this data on their own we suggest that you give a concise, organized and well illustrated lecture on industry structure using the overhead transparencies provided in the student materials. (For aluminum these are Figures 1-7). The lecture outline is probably all-inclusive. You can use the basic organization to simplify the presentation, and students will still have the more complete outline as a reference.

      (1) Suggestions on Organizing the lecture:
      We suggest that you organize your lecture as a lecture-discussion, with you alternatively giving information and testing students to learn how well they are following the organization of material, the concepts, and the analysis of data.

      One of the secondary objects of the lecture should be to teach students how to read graphic presentation of data and tables. Furthermore, we sometimes use data which has been converted into index numbers. You should make sure that students know what an index number is and why we use them instead of the real observations (to facilitate comparisons).

      We have two reasons for suggesting that you give students a carefully organized lecture on industry structure instead of requiring students to find out the information for themselves. We want to save time, and we want to make sure that students learn enough about industry structure to enable them to carry out the main objectives of the industry study. This main objective is to get students to use data to make hypotheses and predictions about industry competitive behavior and long-run efficiency. We are more interested in developing student powers of economic reasoning, than in developing their research skills.

(3) Note on the Definition of an "industry":
You will note that Part I of the lecture describes industry structure of the aluminum industry. Industry structure is somewhat different from market structure in most industries, and in order to understand an industry like the aluminum industry it is necessary to make the distinction.

In lesson 7 students studied the five basic market structure characteristics which differentiate markets from eachother; concentration, barriers to entry, product differentiation, demand elasticity, and demand growth. The structure of an industry like the aluminum industry is a bit more complicated because the aluminum industry is made up of several markets, not just one. The problem arises because it is difficult to define operationally the boundaries of an industry.

An industry can be defined in many ways, but generally speaking, an industry is a group of firms producing one product or a group of related products. The products are related either because they are close substitutes, or because some of the same raw materials or stages of production are used in producing them.

If firms in an industry produce more than one product, then the industry operates in more than one market. The number of more-or-less distinct markets in an industry depends on three things: (1) the number of distinct stages of production involved in producing the final output (in aluminum there are five); (2) the extent of vertical and horizontal integration (if the industry is made up of fully vertically and horizontally integrated firms then there are no sales at different stages of production and so there are no markets for semi-finished goods -- this state of affairs is very rare); and (3) the geographic extent of the product markets (the cement industry is made up of a large number of regional cement markets because cement is not sold in a national market).

The reason a group of markets are considered in one industry is one industry for purposes of study is because there is a great deal of overlapping competition between the markets. Therefore, it is sensible to study the total group of firms and markets together. You will see, however, that in the aluminum industry, we do distinguish between two broad categories of markets -- primary aluminum production and fabricated aluminum -- and within each of these categories there are additional breakdowns. For some purposes we study the total group of markets and for other purposes we study specific subsections.

c. Student summary of industry structure:
After you complete your lecture on industry structure, and as assignment to be turned in for a grade, students can test their comprehension by completing Table 2, Summary Table of Market Structure of the Aluminum Industry. This is the last page of the student readings on aluminum. Unfortunately, the correctly completed table is also included as page 9 of these materials. (It was supposed to be given out separately to inform students of the correct answers). If you can get students to pull out and hand in page 9 before you start the lecture, you can still assign this

exercise. This exercise may be unnecessary if students respond easily to your questions in class.

3. Analysis of Industry Conduct:

A. General Suggestions:

There are many ways one might organize the analysis of industry conduct. See the outline above on How to Study an Industry for the complete description of types of industry conduct which can be studied. In general, we are interested in looking at three kinds of competitive behavior: price competition, product competition, and coercive tactics of large firms against small firms or potential competitors.

Industry conduct depends to a great extent on industry structure, and one of the reasons for using more than one case study is to illustrate the effect that different market conditions have on industry conduct. In the three studies included here, one major difference will be the increased importance of product competition in automobile manufacture because the product is a differentiated product.

Because of limitations of time, it is probably important to limit class analysis to fairly standard kinds of market behavior. We suggest that you study aluminum first, then autos, and finally telephones. Instead of studying each industry in complete detail use each industry to illustrate a different aspect of oligopoly or monopoly behavior. Use the aluminum industry to discuss how a monopolist determines price, and the absence of price competition in an oligopoly market. Use the automobile industry to illustrate non price competition, and its effects on increasing barriers to entry in the industry. Use the telephone industry to illustrate problems of regulating monopoly prices and the use of price discrimination by a monopolist. This does not mean that you neglect auto manufacture pricing behavior, but that you limit the discussion to getting kids to argue on the differences (which are not many) between price leadership in autos and aluminum, and to the recognition that for autos and telephones price and over-all rate setting procedures are identical except for the imposition of a low target profit rate by the public regulator.

We suggest the following procedures for getting students to predict market conduct for a given industry.

B. General Predictions about the three forms of Market Conduct: You want to fairly quickly get students to use their summary charts on industry structure to predict the three forms of market competition. After the class agrees on a set of predictions, you should summarize actual industry. We suggest that you use a table like the one provided in Table I on the next page to organize this prediction process, and that you get the total class to participate in making the predictions. The table should be filled out on the board, and students should write down the predictions in their notes, so that after you are finished predicting industry behavior, you can tell them how close they are in actually predicting industry behavior.

The object of this table is to get students to predict the effect on price setting and price changes of the degree of market concentration in the industry. After they agree on this and make a prediction, then they should decide what effect the conditions of barriers to entry have on these conclusions. After they agree on this, they should decide what effect the degree of product differentiation has on price competition, etc., etc., for all industry market conditions. After students have considered all five sets of conditions they should make a prediction about pricing behavior.

This process of prediction might best be done in small groups working without too much help from you, or it might be necessary for you to lead students through the predictions for the first industry, and then let them go it alone. In any event, the first time around, students may have to argue out pros and cons before they arrive at the conclusion that oligopolists do not engage in price competition, that prices tend to be stable, that there is a price leader. They may reach entirely different conclusions, like all of the firms should get together to overtly fix prices. This is a fine conclusion, and one industries would prefer if they could do it legally. But unfortunately for oligopolists, cartels and price fixing is illegal.

Even if students come up with some wild prediction which doesn't make sense, let it stand. Your chance for correcting their predictions comes in summarizing actual industry behavior. This information is provided in the instructor's essay and in the graphs showing price behavior. After you present the facts, students should be asked to figure out why their predictions were wrong. Unless they really goof, the reason should be that they failed to take some market condition into effect, or because they had inadequate information to begin with. The reason for using Table I procedure to make prediction is to get students to be complete in considering the effect of important market conditions on industry conduct.

C. Student prediction of market conduct under specific historical conditions: If the above class exercise doesn't take too long, you might want to give students even more experience predicting industry behavior. We have provided many instances of competitive industry behavior in the instructor's readings, also descriptions of conditions under which new firms entered the industry or began to dominate the industry (the entry of new firms in aluminum, the take over by GM in autos in the 20's, etc.). We suggest that you take one or more of these instances, fill students in on the background conditions at the time, allow them to use the data provided in their readings, tables and figures, and get the class to predict industry behavior. You can do this by getting different ~~students~~ or groups of students to make decisions for different firms in the industry, or you can be more general and allow the total class to figure out the chain of reactions of different firms to a given market situation.

In the aluminum industry study, provided in the teacher's readings, there are several descriptions of price changes in recent years which could be used for this sort of exercise. You may only want to try this sort of exercise for one industry. However, a rate decision case for the telephone industry would be a natural for this kind of class simulation of the problems of public regulation.

Table I

Effect on Market Competition of the 5 Characteristics of Market Structure - Aluminum Industry

Market Conduct, (Competitive Behavior)	Market Concentration	Barriers to Entry	Product Differentiation	Price Elasticity of Demand	Growth and Cyclical Stability of Demand	Conclusion: Prediction of Industry Conduct
Price Competition price setting price changes	For primary aluminum, high concentration suggests stable prices, price leader, price leader maximizes long-run profits, More price competition at stage 5, and perhaps 4.	Substantial barriers at stage 1 & 2 Accumlative conclusions in Col. I	Standard product makes price comp. more obvious and need for control of prices greater, more price uniformity Differentiated product increases chances for price competition	Inelastic short-run demand means greater price stability elastic long-run suggests price decline in long-run unless costs rise.	High growth rate may suggest trend of falling price, depending on declines in costs and reasons for the growth in demand.	
Product Competition advertising model changes packaging the need for a model line research and development costs						
Coercive Tatics				May try to use tariffs		

4. Analysis of Industry Performance:

   A. Get students to list the important variables which should be looked at to test long-run industry progress and efficiency.

   B. For each, make predictions about long-run trends and the amount of short-run flucturations. For instance, in aluminum prices should be fairly stable but might decline in the long-run from 1900 to 1960.

   C. Have students compare predictions with the actual record as provided in the tables and figures at the end of their packets of information. These figures (8-14 for aluminum) are also provided in overhead transparencies for your use in class.
   For all of these tables, time series data is given for a number of years, data is presented in index numbers to facilitate year-to-year changes, and industry behavior is compared with behavior for all manufacturing or for some allied industry. In order to study performance, these two types of comparison are necessary; comparison of industry behavior at different points in time and over time, and comparison of industry behavior with general business over the same period of time. You should be sure that students can use these graphs to make the necessary comparisons by testing them in class, suing the transparencies.

5. Comparison of Industries:

For each industry you should get students to summarize good, bad, and questionable industry performance (from the point of view of public welfare). You should also get students to link up these good and bad performance characteristics with their cause -- industry structure characteristics. If you are not ga-ga on tables you might do this by getting the class to complete the following type of table for each industry. You may find that a great number of performance characteristics fall into the questionable category, particularly if there is disagreement among students about what constitutes good and bad.

Table II
Comparison of Performance Characteristics of Aluminum, Auto Manufacture and Telephone Services, traits which do and do not promote public welfare

Performance, Good for Public	Cause: Structure Trait	Performance, bad for public	Cause:	Performance, Questionable public good	Cause

6. Concluding Discussion to Draw Inferences about Industrial Organization in the U.S.

Students should try to generalize from this experience studying specific industries. What general statements or hyptheses can they make about the operation of the U.S. market economy? What further information do they need to know in order to make more specific conclusions? What effect do these conclusions have on their attitudes about the need for government control of business?

You may use the questions already provided in the long-term behavioral objectives as the basis for this discussion. You may want to make students do some writing, either of conclusions or as a sort of library research paper.

ECON 12
LESSON 8
UNIT II

TEACHERS' ESSAY ON AUTOMOBILE INDUSTRY: ADDITIONAL INFORMATION ON STRUCTURE, CONDUCT AND PERFORMANCE OF THE INDUSTRY

ESSAY ON MARKET STRUCTURE

1. BARRIERS TO ENTRY SINCE THE 1950's

Tables 2,3, and 4, provided in the Students' Materials, summarize present-day barriers to entry into the automobile industry under three types of categories: (1) economies of scale, (2) product differentiation, and (3) capital requirements. The tables demonstrate that today the barriers to entry are even higher than the pre-World War II period because of three new factors: (1) economies of scale associated with the trend toward complex manufacturing facilities, integrating production of "component parts," such as engines and bodies with "assembly plant" production; (2) higher financial costs resulting from investment in larger integrated plant complexes; (3) increased emphasis on annual model changes and large-scale advertising campaigns; and (4) the branching out inot a well-diversified product line embracing four rather than one price class. In view of these additional barriers, the likelihood of further entry into the industry today seems well-nigh impossible.

Efficiency of Plant Size. The question arises, how large an automobile plant must be in order to realize optimum efficiency. According to a study by Joe Bain, the minimum size of auto plant, i.e., an integrated plant complex, necessary to realize lowest per unit costs, would be 300,000 passenger cars per year, with some probably additional increase in efficiency up to 600,000 units.[1] A plant complex of this size represents from 3 per cent to 6 per cent of national output, assuming an industry total of 9,335,000 in 1965. The economies of scale arise principally from greater efficiency in the production of major components, especially engines and bodies. Scale ecnomies are relatively unimportant in assembly operations: 60,000 to 180,000 units per year are considered to be an optimal size for assembly alone.

A similar estimate of optimum size was given by Mr. George Romney, former president of American Motors, at the Senate Hearings on Administered Prices in 1958. According to his testimony, a company can build between 180,000 and 220,000 cars a year on a one-shift basis and 360,000 to 440,000 cars on a two-shift basis and make a good profit and "not take a back seat to anyone in the industry in production efficiency."[2]

---

[1] Joe S. Bain, Barriers to New Competition (Cambridge: Harvard University Press, 1956), pp. 244-6.

[2] U.S. Senate Committee on the Judiciary, Subcommittee on Anti-trust and Monopoly, 86th Congress, 1st Sess., Hearings on Adminisered Prices, Part 14, p. 2851.

On the basis of these estimates, General Motors, with an annual production in 1965 of around 4,949,000 is eight to sixteen times the size needed for optimum production efficiency; Ford, with an annual production of around 2,566,000 in 1965, is four to eight times the minimum; and Chrysler, with a production of approximately 1,468,000 in 1965, two and half to five times the optimum-sized plant.

This does not mean, of course, that General Motors, Ford and Chrysler have passed the point of optimum plant efficiency. For all three companies, production is carried on by a number of separate divisions and plants. What these figures suggest, however, is that a comparable degree of efficiency in production can be attained by an enterprise well below the size of any of the Big Three.

2. PRODUCT DIFFERENTIATION

Few industries have as high a degree of product differentiation as the automobile. The primary sources of product differentiation in autos are (1) the nature of the product, (2) annual model changes, (3) advertising, and (4) sales and service operations through a system of controlled dealers. Since these have already been discussed in some detail under "Barriers to Etnry" in section 3, a summary of the bases for product differentiation is provided in Table 5 below.

For automobile manufacturers there are two advantages to policies aimed at increasing product differentiation: (1) advertising and model changes can enlarge the total market for new cars by encouraging consumers through psychological suggestion, to buy new cars before the old ones wear out and (2) these policies can increase an individual seller's share of the market at the expense of competition. Both of these objectives have aided in reducing the price elasticity of demand for autos, thereby eliminating the need to compete through price changes.

Product differentiation is the major cause of high barriers to entry in the auto industry and for the present high seller concentration of firms. As explained in the previous section, new entry into the industry is discouraged because of the great disadvantages product differentiation imposes on the newcomer in the form of (1) high financial costs for annual model changes and related advertising outlays, (2) the tendency for buyers to rely upon the established reputation of the Big Three producers, (3) the need for a widespread dealer organization, and (4) the low resale and trade-in value of the new firm's model compared with the established members of the industry.

3. THE DEMAND FOR AUTOMOBILES

The important factors affecting auto sales are (1) changes in consumer income, (2) changes in prices of old and new cars, (3) scrappage rate of old cars, (4) availability and terms of credit, (5) model changes and advertising, (6) population growth and population shifts, and (7) consumer confidence. All of these factors are summarized in Table 6.

Special Characteristics of Automible Demand

The demand for a new automobile has certain special characteristics not generally found in the purchase of other consumer goods. It is these characteristics which largely explain the wide diversity of factors influencing its purchase. First, the automobile is a durable good, which normally can run for a number of years without major repairs. The demand for a new automobile, therefore, is essentially a replacement demand for an old auto. Quantity sold can fluctuate widely because people can put off car replacement more easily than they can put off buying food.

Second, for the average family, the purchase of a car is, next to the purchase of a house, the largest single expense, and payments are the largest item in the family budget. This means that the average consumer may not be in a position to buy a new car unless credit is available at favorable terms.

Third, the automobile satisfies a great range of consumer wants. It not only provides basic transportation but it gives a wide variety of psychic satisfactions. Styling changes and the necessary widespread advertising are effective because of this special characterisitic of consumer demand. If desire to own a given car is based on wants or needs unrelated to mere transportation, then model changes and advertising are more likely to prove successful in pursuading the consumer to spend his money for a new car, rather than on other consumer goods.

Fourth, though an almost necessity in the U.S. today, it has some of the qualities of a luxury purchase for most buyers. Generally, a family buys a car after all essential minimum needs are taken care of. Because the car, even if purchased under a credit plan, constitutes a heavy and insistent monthly drain on the budget, usually over a three-year period, consumer confidence in his future earning power plays an important part in automobile demand.

Price and Income Responsiveness of Demand

Most statistical studies on automobile demand explain automobile sales as dependent on two principal variables: income and price. Table 10, below, summarizes the findings of four major studies of the elasticity or responsiveness of demand to price and income, both for the pre- and post-World War II periods.[3]

Table 10
Summary Comparison of Several Studies of
Automobile Demand

Study	Elasticity of New Car Purchases with respect to	
	Price	Income
Ross & Von Szeliski	-1.5	+2.5
Atkinson	-1.4	+2.5
Chow	-1.2	+3.0
Suits	-0.6	+4.2

Source: Senate Report, Administered Prices: Automobiles, Nov. 1, 1958, p. 144

---

[3] Elasticity of demand is expressed by the following values: Price ElasticitY; lL-l, relatively elastic; l=-l, unit elasticity; -lLlL0, relatively inelastic. Income elasticity: lLl, relatively elastic; l=l, unit elasticity; lLlL0, relatively inelastic

Except for Suits' analysis, the results presented in the table show price e;astocotoes ramgomg betweem -1.2 and -1.5, and income elasticities ranging between +2.5 and +3.0.[4]

A rough approximation of the responsiveness of demand to various possible price changes by the automobile industry, given various possible changes in income, is shown in Table 11 below.

Table 11

Per cent Changes in the Number of Cars Sold, for Given Per cent Changes in Price and Income

Percentage change in relative price	Percentage change in income (per capita in constant dollars)						
	-8	-6	-4	-2	0	+2	+4
+10	-36	-30	-24	-18	-12	-6	0
+ 5	-30	-24	-18	-12	- 6	0	6
0	-24	-18	-12	- 6	0	6	12
- 5	-18	-12	- 6	0	6	12	18
-10	-12	- 6	0	6	12	18	24
-15	- 6	0	6	12	18	24	30
-20	0	6	12	18	24	30	36

Source: Ibid., p. 145.

The data predicts that, if income remains the same, a 5 per cent increase in price would mean a 6 per cent decrease in sales, while a decline in income of 2 per cent, coupled with a 5 per cent increase in price, would produce a drop of 12 per cent in sales, and so on.

Demand for Cars Grows Cyclically with Economy

The fact that the demand for cars is greatly affected by consumer income suggests that the number of cars sold might be highly affected by the trend of general business conditions. This is true. Table 11 demonstrates that passenger car sales are determined primarily by general business conditions. Furthermore, fluctuations are accentuated by the fact that the proportion of income spent for cars contracts in poor times and expands in good times (figures 4 and 5). For example, in 1961, a year of recession, 5.1 per cent of consumer spending went into autos and parts as compared with 6.5 per cent in prosperous

---

[4] Income elasticity measure the responsiveness of quantity demanded to a change in income. It is the ratio of % change in quantity demands
" " " income

1965, and as compared with the trend average of 5.75 per cent for the years 1951-1964.

Because the automobile is a durable good, its purchase can be postponed or accelerated depending upon the existing conditions of income, price, and confidence in business conditions. Changes in income and confidence, therefore, have a "magnifying" effect on new purchases resulting in wide year-to-year fluctuations. Changes in income also affect the relative importance of price as a factor of demand (Table 11), with the consumer demanding economy models and low-priced cars in periods of declining income, and intermediate price lines and luxury compacts in periods of prosperity.

The close relationship between demand, personal income, and consumer confidence in business conditions is best demonstrated by the four-year boom in auto sales during the years 1961-65. During this period, the U.S. economy experienced one of the longest peacetime expansions in its history. Personal income rose from $401 billion at the end of 1960 to $630 billion in 1965, an increase of approximately 25 per cent. With increased personal income reinforced by high consumer confidence in the economy's continued growth, consumer spending on automobiles also reached an all-time high, with auto sales climbing from approximately six million in 1960 to the record heights of over nine million in 1965--an increase of over 25 percent.

This unparalleled increase in auto sales took place at the very time that base prices on new cars were adjusted upward to cover the cost of additional equipment formerly considered optional but now included as standard. Moreover, the public not only bought more cars but preferred more expensive lines of the various models than in previous years.

4. COSTS AND SUPPLY

The most significant feature of manufacturing costs in the automobile industry is the magnitude of overhead costs in relation to total production costs. Since the total amount of overhead costs is relatively constant whether the volume be 500,000 or 1,000,000 units, overhead costs vary inversely with volume. The volume of automobile output, therefore, is vitally important in the determination of unit costs, amount of profits, and the pricing decisions of the industry.

Overhead costs fall under 5 major categories in the automobile industry: (1) maintenance and repair expense; (2) depreciation and obsolescence; (3) tooling, styling and engineering costs, including amortization of special tools; (4) selling, general and administrative expense; and (5) insurance, local taxes, and miscellaneous. They roughly account for one-third of aggregate costs, with the most important being tooling, styling, and selling costs. With the exception of tooling costs, the automobile industry does not break down overhead costs into the specific categories we are interested in for analysis purposes. Consequently, our discussions will be limited to tooling costs, although the same general conclusions apply to styling costs and advertising costs.

Tooling Costs

Tooling costs are a major expense item in the automobile industry because of the necessity for frequent model changes. Combined outlays for these purposes have always been large, and in years of major changes are tremendous. In 1964, the Big Three spent $1,237 million for special tools, dies, jigs and fixtures. These special tools are amortized (written off) over relatively short periods of time because of rapid changes in automobile styling and design, and investment is really for only a short time. Amortization changes for special tools for the Big Three totaled $921 million in 1964. On the whole, amortization changes on special tools parallel changes in tooling expenditures fairly closely with roughly a one-year time lag. Table 12, below, summarizes the amount spent by each of the Big Three for special tools and for amortization of special tools in 1964.

Table 12

(in millions of dollars)

Company	Expenditures in Special Tools	Amortization of Special Toos, 1964
General Motors	751.9	591.3
Ford	324.7	234.6
Chrysler	160.0	95.0
Total Big Three	1,236.6	920.9

Since World War II, tooling costs have increased considerably. For example, Chrysler's expenditures for special tools were $66 million in 1955 as compared with $160 million in 1964. Correspondingly, special tool amortization changes jumped from $51 million in 1956 to $171.6 million in 1965.

Since tooling and styling costs do not vary with volume, the amount of profits on any model depends on the volume of production over which the costs of tools and dies can be spread. Thus, only the better-situated companies, by achieving sufficient volume to keep the unit costs of tools and dies low, are likely to make profit.

ESSAY ON MARKET CONDUCT IN THE AUTO INDUSTRY

1. PRICE AND NONPRICE COMPETITION PRIOR to 1930

Up to the early 1920's, when the automobile industry first rose to prominence in the American economy, vigorous competition among auto manufacturers occurred on all fronts. Not only did auto firms compete with each other to provide greater comfort, safety, reliability, and performance through improved engineering and design, but they also competed vigorously to produce an auto at a lower and lower cost to the consumer. Intense price competition was fostered in good part by the aggressive behavior of Henry Ford. His basic approach to the automobile was to build an efficient instrument of transportation at a price low enough to bring it within the ordinary standard of life. With such an aim, style change had no place, since there was a threat to the goal of optimum efficiency and low prices. This was the time of Ford's famed remark, "any customer can have a car painted any color that he wants as long as it is black."

Ford's aggressive methods of competition made him the leading producer of cars during this early period of the industry. The low-income group was primarily interested in price and reliability, and Ford catered to both of these desires. Not only did he succeed in cutting the price of the Model T from $950 to $290 between 1909 and 1925, but he established a reputation for reliability. In 1921, when the Ford car reached its peak success, it was the cheapest car on the market and accounted for 55 per cent of the industry's output.

In the decade after World War I, automobile demand changed radically. Vigorous price competition had brought the automobile within the reach of most income groups of the country, but now a saturation point was reached. The demand for new automobiles depended merely on obsolescence of old models, the market for cars became mainly a replacement market. This meant that increasing sales would depend on factors other than dependable, low-cost transportation.

PRICE COMPETITION TODAY

There are three major characteristics of pricing behavior in the auto industry: (1) competitors charge uniform prices, that is, price differences among the major producers for comparable models have disappeared; (2) General Motors is the undisputed price leader; and (3) manufacturer prices are rigid; they do not change often.

Price Uniformity

Because the automobile is a highly differentiated product, one might not expect to find similarity in prices for competing cars. Consumer loyalties are generally sufficiently great to allow some independence in pricing. This was largely the situation in the early history of the industry, when prices of comparable models varied enormously. For example, in late 1923, a Ford Model T touring car could be purchased for #380; the Chevrolet Superior and Cleveland 91 models were going for around $500. The Maxwell, Dart, Studebaker--each produced by an independent company--were priced at around $1000. Touring

5

cars such as the Hudson, Hupmobile and Willys-Knight were a little more, but were still under $1500. Another group, including the Marmon and the Cadillac, were in the $3000 range. Then, for the more affluent of our society, there were such showcases as the Duesenberg and the Pierce-Arrow in the $5000 class![1]

Today, price variations among comparable models of the Big Three are very small. For some models, prices are almost identical; in the majority of instances, the companies are within a few dollars of each other. This is particularly true of General Motors and Ford; in the case of Chrysler, a traditional margin of about $20 usually prevails over prices of its competitors. The close price conformity among the companies demonstrates the relative unimportance of price competition as a form of rivalry in the auto industry.

Price Leadership by General Motors

General Motors does not always announce its price list first. However, evidence suggests that even when Ford or Chrysler announce their new prices first, their basic aim is to anticipate the price actions of General Motors. The evidence here is that in cases when the prices were different from GM prices, they retracted their announced prices. This has been true even when their listed prices undercut General Motors. The case of Ford in the pricing of its 1957 model is an instance of "a very bad guess" of this sort. In the fall of 1956, rumors were abroad in the industry that prices on the 1957 models would be increased 5 to 7 per cent to help maintain "a competitive pricing position for higher cost producers, such as Chrysler, American Motors, and Studebaker-Packard." However, the first announcement was made by Ford, and the average increase was only about 2.9 per cent. Two weeks later, General Motors announced its prices on its new Chevrolet models, and the average price increases amounted to 6.1 per cent. After one week's delay, Ford revised its prices upward to be in line with those of GM. Chrysler then announced prices which conformed to those of Ford and GM.

How General Motors Sets Prices

Under competitive conditions, price is set by market forces and tends to equal the summation of costs plus a reasonable profit; high-cost producers who cannot sell at these prices go out of business. Prices are set to enable the firm (GM), over the long-run to earn a certain "target" profit rate of return on its investment. Usually this target rate is stated at 15 per cent net return on capital employed, or alternatively as 20 per cent of net worth or stockholder's equity. GM determines this profit per car and adds its unit costs (i.e. direct labor and material costs plus unit overhead costs) projected on the basis of a "normal" or "standard" volume of production--generally set around 80 per cent of rated capacity.

The estimate of volume and production is an important calculation because overhead costs drop as volume produced increases. Thus, if costs are projected assuming 80% capacity utilization, then if the firm operates at 90% capacity overhead, costs per unit will be lower than anticipated. The firm's profits will be higher than anticipated. The reverse is true when production volume is less than 80%.

---

1. Estes Kefauver, In a Few Hands: Monopoly Power in America (N.Y., Pantheon Books, 1965) p. 84.

The "target" rate of profits is a long-run pricing objective of the company. No attempt is made to "maximize" the return in any given year. When production exceeds standard volume, the actual rate of return exceeds the target. When production falls below the standard volume, the actual rate of return is below the target.

This is also the method employed by public utility companies, such as the telephone companies. A public utility is a monopoly subject to Government regulation. In determining the reasonableness of price, the regulatory body sets a limit--6 per cent or 8 per cent--as a fair return upon the capital employed. Though it uses the same method as public utilities for determining its prices, GM, in contrast, is free to pick its own target rate of return.

The rates of return earned by General Motors since World War II bear eloquent witness to the effectiveness of the company's pricing policy. As Table 13, below, shows, General Motors exceeded its target rate of return of 20% eleven out of the seventeen years in the period 1947-1964. The company's average rate of return after taxes during this period was an impressive 22 per cent. In the poorest of these years, 1958, the rate of return on average stockholder's investment was 12.6 per cent, a figure considerably above a "fair" return for any utility.

Unlike General Motors, neither Ford nor Chrysler employes a cost formula as the basic dgerminant of its prices. They don't have to, since to meet the price set by General Motors is their aim. There is no evidence of collusion between competitors on prices, nor of even informal trade talk among the members of the industry. On the contrary, there has been almost a fanatical secrecy in the industry respecting new models and their accompanying prices.

Price Rigidity

The use of the standard volume pricing procedure described above means that prices will be stable (rigid); they don't often change. When output exceeds standard volume, prices are not usually raised, and when output falls below standard volume, prices are not likely to be cut, since it could further reduce the company's long-range financial objective of a 20 per cent profit.

NON-PRICE COMPETITION TODAY

Since the 1930's, rivalry among firms has been largely replaced by various forms of non-price competition. The two types which have received the greatest emphasis are style changes and advertising.

Style Changes and Advertising

In the early days of the industry, style changes in the automobile meant significant technical developments. For example, in 1919, Franklin contributed the electric vaporizer in the carburetor; in 1921, Dusenberg, introduced hydraulic brakes and the fitting of four-wheel brakes on stock cars. During this

Table 13

General Motors' Rate of Return (after taxes) on Stockholders' Investment, 1947-1964 (in per cent)

Year	Rate of Return
1947	20.2
1948	27.1
1949	33.4
1950	37.5
1951	21.7
1952	20.0
1953	19.7
1954	24.5
1955	27.9
1956	18.5
1957	17.2
1958	12.6
1959	16.3
1960	16.5
1961	14.8
1962	21.9
1963	22.4
1964	22.8
Average	22.0

Sources: Figures for 1947 - 1954 obtained from Walter Adams, op. cit., p. 346.

Figures for 1955-1964 obtained from 1965 Annual Report of General Motors.

period, other companies introduced balloon tires, high-pressure chassis lubrication, lacquer finish for bodies and the use of molybdenum steel in construction.

Today, style changes are generally not basic innovations, but rather are largely changes in appearance, designed to make the product seem new and different. Prior to 1950, major style changes, involving some advances in technology, were made every four or five years. Intervening years were marked by superficial style changes to build up consumer appeal for the new models. Since 1950, however, this time period has been shortened, so that today, the Big Three seem to bring out a new model every year.

Annual Model Changes

Why the increasing frequency of model changes? The automobile is a durable good and, by its very nature, is designed to give service for many years. In fact, according to the claims of its advertisers, it could be run for at least 100,000 miles without major repairs. One device for increasing sales could be to reduce the quality of the product, so that customers would be compelled to replace their cars more frequently. However, since the auto industry has a good reputation for high quality products, it has rejected this device. Instead, another method of increasing sales has been adopted: "Obsolescence has nothing to do with the physical properties of a good; it refers to the psychological attitude of the customer. The more frequently customers feel they would like to buy a new car, the more rapidly cars become obsolescent."[2] Hence the firm embarks on a campaign of "planned obsolescence" involving two major steps.

The first step is to make annual changes in the appearance of its cars, with or without any major substantive changes. The 1965 model, for example, featured recessed wheel covers, hardtops, fast backs, wire spoke wheels, finless bumper tails, sculptured fron and rear ends, and so forth. Advertising uses many forms of psychological suggestion accompanying the introduction of each new model. To introduce the 1966 model, Chevrolet ran a twelve- page color ad in magazines, a six-page, black and white and color unit in newspapers. Ford ran a seven-page gate fold in Life and Look. Plymouth put a twleve-page insert in the Reader's Digest.

Cost of Annual Model Changes:

Annual model changes are very costly to the auto industry, and, in turn, to the consumer. It means heavy annual retooling expenses in the form of new dies, jigs, templets, or even new machinery. It means high annual amortization costs of these special tools; it means high annual advertising and promotional expenses. All of these expenditures have increased since 1950. For example, in 1964, the Big Three expended $1,236.6 million ddlars for special tools; it expended $888.3 million on the amortization of special tools as compared with $182.3 million in 1950; it expended $245 million (1963) on advertising outlays in the six media as compared with $61.5 million in 1950.[3]

---

2. Delber A. Snider, Economic Myth and Reality, (Prentice-Hall: Englewood Cliffs, N.J., 1965), p. 127.

3. Report of the Subcommittee on Antitrust and Monopoly of the Committee on Judiciary, U.S. Senate, 86th Congress, 1st Session. Administered Prices: Automobiles, Nov. 1, 1958 (Wash, D.C.: U.S. Government Printing Office, 1958) Chapter 5. (referred hereafter as "reports")

In 1962, a paper was presented to the American Economic Association on the costs of automobile model changes in recent years.[4] For the five-year period 1956-60 it was estimated that model changes contributed about 25 per cent to the average price of four-door sedans currently available in the market. Overall expenditures for the entire industry for model changes amounted to about 3.9 billion dollars annually during this period.

This is not a full accounting of the costs. Accompanying the annual model changes has been the horespower race which started in the early 1950's. The ever larger engines have necessitated bigger and heavier cars which have not only created greater expense in constructing a car but greater expenditures throughout the car's life. Important among these is increased gasoline consumption. According the study, the owner of the average 1956-60 car paid for gasoline about $40 more per 10,000 miles thatn would have been necessary, if models had remained constant as of the period just prior to the horsepower race. This represents another 20 per cent increase in total gasoline costs, or an additional annual expenditure of about 968 million dollars. Thus, if costs resulting from the horespower race are included, the costs of annual model changes for the period 1956-60 ran to about 5 billion dollars annually.

Who Dictates the Style?

In the Senate Judiciary Committee Hearings on Administered Prices in 1958, Harlow Curtice, the president of General Motors, was asked who dictated the style of American cars, making them bigger and fancier each year? "Fancification," he replied, "is the result of the demand on the part of the public."[5] When asked whether the consumer took the initiative or was receptive to auto companies' advertising, he replied, "I would say that the customer now has the pressure on us to make changes,"[6] He went on to explain that consumer preference was determined by surveys constantly being conducted, and added significantly, "There is no indication that these will be a change in a the trend in the near term."[7]

However, the testimony from other auto company officials indicated that the consumer was not always the dictator of style changes but rather a final arbiter on the market place. An official of Ford pointed out that, unlike most consumer-goods industires, there is a "four-year gestation period"[8] on automobile production; the 1962 models, for example, were worked up in 1958. This time factor, of course, presents serious problems; there is always the danger that one may produce cars consumers wanted four years earlier. Indeed, according to one industry authority, this is exactlywhat happened in the case of the Edsel. Richard S. Latham, industrial designer, told the Senate Committee that "the Edsel, a wholly new product, said to have cost 250 million dollars to develop, is the result of four years' research into what the consumer really wanted in a middle-bracket car. The conclusion that one cannot fail to

---

4. Fisher, Friliches, and Kaysen, "The Cost of Automobile Model Changes Since 1949," American Economic Review, Paper and Proceedings"(May, 1962) pp. 259-61.
5. Report, p. 77
6. Ibid.
7. Ibid.
8. Ibid. p. 78.

reach, for its apparent and proven lack of success, is that it was indeed research in what people wanted--four years ago."9

To a large extent, styling is a guessing game. Since the risks are extraordinarily great, only the Big Three can survive such costly mistakes. For example, American Motors, suffereing from an "image lag" in 1964, entered into a crash spending program to introduce the fastback Marlin. The new model proved a disappointment and sales in 1965 lagged significantly behind those of 1964. Running close to the line on finances, American Motors is less able to withstand the kind of multimillion dollar styling or engineering mistake that every company is susceptible to.

The Auto Industry Defends Annual Model Changes.

The auto industry takes issue with those who think the United States' auto industry's annual model changeover is wasteful. They point out that far from being economically harmful, the annual model changes have been a major factor in keeping competition among the auto companies keen. They claim that it has also resulted in a greatly improved quality of car over the years. Moreover, it has been a major factor in keeping the American economy booming in recent years.'

The automobile industry occupies a pivotal position in the economy; one out of every seven persons now employed in the country works in some aspect of the automobile industry. One out of every six American businesses is automotive in nature.

---

9. Ibid., pp. 78-79.

UNIT II LESSON 8

TEACHER'S INFORMATION ON THE STRUCTURAL CHARACTERISTICS OF THE ALUMINUM INDUSTRY

I. TECHNOLOGY

The aluminum industry can be divided into five sectors or sub-industries, according to its stages of production. (Figure 1) Each stage involves a distinct technology and usually a plant in a separate geographic location. Producers who engage in three to five stages of aluminum production are called vertically integrated firms. Those who participate in only one or two stages of fabricated aluminum are called independent producers.

Stage 1 of aluminum production involves the mining and processing of two ores, bauxite, the principal aluminum ore, and fluorspar, a chemical compound essential in the reduction of aluminum. Bauxite mining, however, is the major operation. Today the bulk of United States bauxite requirements is obtained from American-owned low-cost deposits in Jamaica, Surinam, and British Guiana. Some bauxite is also obtained from mines in Arkansas, but these mines are of low-grade quality compared to those owned abroad. U. S. producers are now developing new sources in Australia and Ghana, where extensive high-quality ore reserves have recently been discovered. Related to these mining operations, domestic producers own and operate their own shipping service for the transportation of bauxite and fluorspar ores from the mines abroad to the processing plants in the United States.

Stage 2 of aluminum production involves principally the refining of bauxite into the mineral compound aluminum oxide, commonly called alumina.[1] The processing plants--referred to as alumina plants--are mostly located near the coastal ports of the Gulf of Mexico, where the bulk of bauxite imported ores is shipped. In addition to refining bauxite ore, alumina plants also include related facilities for the manufacture of aluminum fluoride, synthetic cryolite, and carbon electrodes, all essential raw materials for the production of primary aluminum. Thus alumina plants process and manufacture almost all the chemical products needed for the production of aluminum metal.

In Stage 3 of production, alumina, dissolved in a cryolite solution, is reduced or smelted by an electrolytic process into the primary metal aluminum.[2] The large quantities of electric power required to produce aluminum (15,000 to 17,000 kilowatt-hours for one ton of aluminum) originally led the aluminum industry to locate plants near sources of low-cost hydroelectric power in the Pacific Northwest and Tennessee Valley. However, the increasing efficiency of thermal power plants has resulted in the construction of coal-powered and lignite-fueled reduction plants located largely in the Ohio Valley and in Texas. Today approximately forty-five percent of the U. S. smelter capacity is based on hydroelectric power, thirty-four percent on coal, and twenty-one percent on gas.[3]

---

[1] The special chemical process extracting alumina from bauxite was discovered by the German chemist Karl Josef Bayer in 1889.

[2] This process was developed by the American chemist, Charles M. Hall in 1886. Except for substantial improvements in equipment, and for the size of the units employed, the Hall process in use today is basically the same as when discovered some 80 years ago.

In Stage 4, aluminum ingot is fabricated into relatively standardized wrought products in either semi-finished or final form. About three-quarters of the primary aluminum metal is processed into so-called mill-end products consisting of sheet and plate, extrusions,[4] rod and bar, wire and cable, foil, tubing, forgings, and powder. Most of the remainder is used in castings and a relatively small portion goes into alloying and steel deoxidizing.[5]

In Stage 5, aluminum mill-products are subject to further processing into almost every conceivable type of consumer end-products. Typical examples of end-use fabrications are building materials, automobile and aircraft components, household appliances, packaging and containers, and electric products such as wire and cable.[6] In the past, most fabrication plants were located near the eastern markets of the United States. Today, to minimize transportation costs, many of the new fabricating plants are being built either adjacent to the hydroelectric plants on the West Coast or near the thermal reduction plants of the Ohio Valley and Texas.

Today there are only eight integrated producers in the aluminum industry. Four of the eight are fully integrated firms engaged in all five stages of production. The remaining four are partially integrated firms engaged in Stages 3, 4, and 5; i. e., reduction of alumina into primary aluminum and fabrication of aluminum metal into semi-finished and finished forms.

---

[3] U. S. Department of Commerce, Aluminum Factbook (U. S. Government Printing Office: Washington, D. C., 1963), p. 21.

[4] Extruding consists of forcing aluminum ingot through a die that has an opening similar to the finished shape. This operation is analogous to forcing toothpaste through a tube. Numerous industrial products are made by extruding as well as consumer items such as doors and storm windows.

[5] As Figure 1 shows, sheet, rod, and bar require two distinct sub-stages of production: hot rolling to produce reroll stock and cold rolling to produce the finished fabrication. Extrusions and castings have but one clearly defined stage in fabrication.

[6] Aluminum foil and cable are customarily classified as semi-fabricated products rather than end products, even though they require no further manufacturing before their final use.

Vertical integration--even partial--offers a company a number of advantages over those who are independent fabricators. First, it guarantees the integrated firm an adequate supply of aluminum metal for its fabricating needs (probably at a lower cost than if it were a buyer). Second, it provides a captive market through its own fabricating plants for increased sales of aluminum metal. Third, it gives the integrated firm a broader earnings base when profit margins are low on fabricated products compared with primary metal.

II. SELLER CONCENTRATION

Up to World War II, the U. S. aluminum industry consisted almost entirely of the Aluminum Company of America, commonly called Alcoa. Since that time, seven new firms have entered the industry. Two firms, Reynolds Metal Company and Kaiser Aluminum Company, entered the industry in the 1940's; three firms, Ormet, Anaconda Aluminum, and Harvey Aluminum[7] entered in the 1950's; and two firms, the Consolidated Aluminum Company, (CONALCO) and Intalco Aluminum Company[9] joined the industry in the 1960's. Another is rumored to be about to join the industry soon. Credit for the break-up of Alcoa's monopoly position goes largly to the U. S. government, which fostered new entry into the industry in two important ways: (1) disposal of its World War II aluminum plants at low cost to two aluminum fabricabors, Reynolds Metal Company and Kaiser Aluminum Company and (2) generous financial assistance to new entrants through government loans, tax incentives, accelerated write-offs and profitable orders.

The three largest producers of the aluminum industry are Alcoa, Reynolds, and Kaiser. Because of their dominance, they are referred to as the "Big Three." They are fully integrated firms engaged in all five stages of production. The "Little Three" consist of Anaconda, Harvey, and Ormet, all of whom started out in the fabricating end of aluminum production. Only Ormet is completely integrated, although a relatively small producer compared to the Big Three.

---

[7] Ormet is jointly owned by Olin Mathieson and Revere Copper and Brass; Anaconda is owned by Anaconda Copper; Harvey is a Los Angeles aluminum fabricator.

[8] Conalco is an affiliate of the Swiss producer, Aluminum Industries A. G.

[9] Intalco is owned 50 percent by American Metal Climax and 25 percent each by Howe Sound Co. and Pechiney, a French producer. The American 1965 Annual, p. 465.

SELLER CONCENTRATION BY STAGES OF PRODUCTION

Stage 1. Seller concentration in the aluminum industry varies with the stages of production. Only the Big Three and Ormet are involved in the first stage of production. The Big Three own or control extensive deposits of bauxite both in the United States and abroad. Ormet, the smallest producer, does not presently own its own mines but purchases its bauxite supplies in Dutch Guiana on a long-term lease from foreign owners. Figures are not currently available on the relative size of each firm's bauxite holdings. Reynolds, however, reports it presently has sufficient bauxite supplies for its own use for a least 40 years at the current operation level.

Alcoa and Reynolds are the leading owners of the domestic bauxite mines located largely in Arkansas. Since these mines are of relatively low-grade quality, the integrated firms obtain the bulk of their bauxite supplies from foreign deposits. These are either owned outright or leased from foreign companies or governments. The most important U. S. holdings abroad are in the Caribbean countries of Jamaica, Haiti, and Dominican Republic and in the South American countries of Surinam and British Guiana. To enlarge their reserves, the Big Three and Ormet are presently developing new bauxite sources in Australia, Ghana, and Guinea West Africa, where extensive high quality ore reserves have recently been discovered.

Stage 2. Only the Big Three and Ormet are engaged in this stage of production. In 1964, there were eight domestic alumina plants; three were owned by Alcoa, two each by Reynolds and Kaiser, and one by Ormet. The percentage share of domestic alumina plant capacity in 1963 was as follows: Alcoa, 37.3 percent, Reynolds, 31.9 percent, Kaiser, 24.3 percent, and Ormet 6.5 percent. (Figure 4) In addition to its alumina plants, Alcoa also owns two plants in Australia and Surinam. A number of foreign based alumina plants are being planned or are under construction abroad by other integrated producers.

Most of the alumina output of the Big Three is produced for their own aluminum reduction plants; a part, however, is sold to the partially integrated firms for use in the latter's reduction facilities. Ormet, however, produces alumina only for its own reduction plants.

Stage 3. All eight integrated producers are engaged in the reduction of primary aluminum. (Intalco, however, will not start production until sometime in 1966). The changes in market shares of the Big Three primary producers and the Little Four for selected years, 1940-1964, are shown in Figure 3. Until 1958, the Big Three produced 100 percent of the primary aluminum output. With the entry of four new firms since that time, the Big Three's share of the market has been reduced to 83 percent. In 1964, the fully integrated producers had 92 percent of the industry output, and the partially integrated producers had 8 percent of the industry production.

Individual shares of output for 1964 were as follows: Alcoa, 34 percent; Reynolds, 26 percent; Kaiser, 23 percent; Ormet, 7 percent; Harvey, 4 percent; Anaconda, 3 percent; and Conales, 1 percent. When Intalco's reduction plant is completed in 1966, it is expected to have approximately 2.5 percent of the 1964 reduction capacity. (Figure 2)

The Big Three produce aluminum metal both for their own fabricating plants and for general sale to the independent fabricators. The smaller firms produce aluminum metal mainly for their own fabricating plants, rather than for general sale.

Competing Sources of Supply in Stage 3

In addition to the output of domestic primary producers of aluminum, there are three other sources of supply of aluminum metal: (1) imports from foreign primary producers; (2) secondary smelters of aluminum metal; and (3) the U. S. government stockpile of aluminum metal. Each of these sources provides either actual or potential competition to the primary producers. (Figure 5)

Foreign Imports. Foreign imports constitute approximately 12.5 percent of the U. S. ingot supply, having grown by 2.5 percent since 1958. Almost two-thirds of these shipments come from Aluminium Limited in Canada, with the remainder from some dozen countries including Norway, France, and Japan. Most of the primary metal imports are sold to the non-integrated fabricators, but some are sold to primary producers under long-term contract. In periods of excess capacity, foreign imports provide healthy competition to the primary domestic producers. On the other hand, in times of excess demand, imports relieve some of the pressure on the Big Three to supply the independent fabricators and thereby help maintain and expand the position of the integrated producers in the domestic semi-finished and end-product markets.

The most important foreign competitor of the U. S. primary producers is Canada's Aluminium Limited.[10] She is today the world's largest producer and exporter of aluminum metal and because of lower costs can absorb the American tariff and still maintain a delivered price competitive with our domestic producers. Limited is now experimenting with a radically new process of producing aluminum directly from bauxite without first converting it into salt-like alumina. If successful, that process should cut her production costs by 25 percent.[11]

---

[10] Aluminum Ltd. was originally organized as a subsidiary of Alcoa to handle the latter's foreign holdings in Canada and Europe. Although the two companies were legally independent, the same eleven controlling stockholders held about half the common stock in each company. In 1951 the federal court ordered Alcoa to divest itself of its stock holdings in Limited in order to promote greater competition within the aluminum industry. To comply with this order, the major stockholders of both Limited and Alcoa were forced to sell their interest in one or the other company. Since then Limited has become an important competitor of Alcoa's and the latter's prime interest has been to block its Canadian rival from winning more of the U. S. market.

Secondary Smelters. Another source of aluminum metal is secondary aluminum produced by secondary smelters from both new and used aluminum scrap. In 1964, secondary smelters provided 15.5 percent of the total domestic supply of aluminum metal. There are some 92 secondary smelting plants, but the industry is dominated by three leading firms, American Metal Climax (Apex Smelting), American Smelting and Refining, and U. S. Reduction.

Since secondary aluminum does not meet the purity specifications of primary aluminum, it is an inferior substitute for primary aluminum in most applications. However, the alloy impurities of secondary aluminum do not impair its use for aluminum castings. Hence, foundries and die casters are the principal customers of secondary smelters.

Normally, secondary aluminum sells at a lower price than primary aluminum. When primary aluminum is in short supply, however, secondary aluminum serves as an "overflow-market" for primary producers, fabricators, and exporters, which tends to push the price of secondary aluminum above that of primary. The market instability in the price of secondary aluminum works hardships on the long-run occupants of the secondary aluminum market--the smelters and their foundry customers.

U. S. Government Aluminum Stockpile. In recent years, a new competing source of primary aluminum has been the U. S. Government's surplus stockpile of aluminum which amounted to 1.4 million tons in November, 1965. This surplus is equivalent to approximately a half year's output of the primary producers. The government has the power to sell this surplus in the open market and could, if it wished, affect the supply conditions of primary aluminum.[12] To assure an orderly disposition of this surplus, the industry recently negotiated an agreement with the government which provides for the sale of a minimum of 150,000 tons of surplus aluminum during the period November, 1965 to December 31, 1966, and thereafter a minimum of 100,000 tons a year up to a maximum of 200,000 tons. Aluminum will be sold by requiring defense contractors to buy a pound of aluminum from the government for each pound of aluminum contained in the final defense product. Sales of aluminum from the government stockpile will be made at the producer's published price.[13]

---

[11] Limited also prides itself in having the world's biggest aluminum smelter, the biggest private hydroelectric project, and the biggest bauxite production. Its plants span 30 countries from Japan to Africa, and it exports to more than 100 foreign nations. Since Canada can use only 15 percent of its output, it has to sell the rest of it to the world. See "Aluminum Unlimited," Time, March 22, 1963, pp. 9-92.

[12] This was not the original purpose of the stockpile. Following the Defense Production Act of 1950, the government initiated a program for the building of a 2 million ton aluminum stockpile in anticipation of another five-year "conventional war." In 1958 and again in 1963, this stockpile figure was revised downward following the reduction of the estimated duration of such a war from five to three years. The current stockpile goal is 450,000 tons, leaving 1.4 million-ton surplus. Wall St. Jour. Nov. 19, 1965, p. 10.

Stages 4 and 5. In these last two stages of aluminum production, aluminum metal is fabricated into semi-finished and finished products. Here the structure of the industry changes with a competitive fringe existing around the oligopoly core in some product lines. Today there are approximately 200 domestic fabricating companies (1965 figures) making mill products from primary aluminum ingot, some 3,000 fabricators of castings (1955 figures) made principally from scrap or secondary aluminum, and approximately 14,000 end-product fabricators (1955 figures). Despite the large number of competitors, the Big Three are still the leading companies in aluminum fabrication, accounting for over three-fifths of the tonnage sales of fabricated and semi-fabricated products.[14] (Table 1) However, the integrated producers are not equally concentrated in all areas of aluminum fabrication. They are most heavily concentrated in the fabrication of aluminum mill products, moderately concentrated in castings, and as yet relatively unimportant in most end-product applications.

Competition in the fabricated aluminum industry has been especially fierce in recent years because of the large increase in capacity resulting from the entry of many new firms in the 1950's. Intense competition has contributed to two major changes in the structure of the fabricated aluminum industry. First, independent fabricators have succeeded in increasing their share of mill-end shapes, which constitute three-quarters of total aluminum consumption and which was previously preempted by the integrated firms. Second, the integrated fabricators have made several inroads in the independents' share of the castings market. For example, during the period 1950-1964, the independent fabricators' share of production of aluminum sheet has grown from 4.4 percent to 26 percent, while that of extrusions from 35 percent to 61 percent.[15] On the other hand, the integrated producers now have 50 percent of the castings market as compared with only one percent in the 1950's. In recent years, the integrated firms have made a great push to capture a larger share of the end-products market. It remains to be seen whether they will succeed in this endeavor.

---

[13] N. Y. Times, Nov. 17, 1965, p. 65.

[14] In 1964, fabricated products constituted 80 percent of Alcoa's tonnage volume, 65 percent of Reynolds', and 60 percent of Kaiser's. Standard & Poor's Industry Surveys, Sept. 23, 1965, p. M 94.

[15] "Aluminum: A Study in Rollback Economics." Fortune, February, 1966, p. 107.

III PRODUCT DIFFERENTIATION.

Except for end-product applications, the aluminum industry has little if any product differentiation. Primary aluminum and fabricated products are standardized according to grades and forms. Producers attempt to differentiate their products from those of their rivals by such fringe attractions as promptness in filling orders, technical service, assistance to buyers, or personal sales representatives. Nevertheless, the independent fabricators tend to buy from several sources of supply provided they are all the same price.

Some advertising of fabricated products exists to keep the public informed about new developments as well as to identify the product to the consumer. With the exception of some end-products, advertising outlays are relatively modest since advertising does not generally increase the market shares of individual sellers when the product is undifferentiated. Even in the case of differentiated end-products, advertising is considered less important than for such highly differentiated products as cigarettes and automobiles.

IV BARRIERS TO ENTRY.

There are four major barriers to entry in the aluminum industry: scale economies, capital requirements, product differentiation, and absolute cost disadvantages. Since these barriers differ with each stage of production, they will be considered by stages of production where such data is available.

A. SCALE ECONOMIES

Stage 1. The open-strip mining of bauxite in Stage 1 requires a relatively small operation, so that entry would normally be relatively easy. However, since most available deposits are now in underdeveloped countries, the opening up of such deposits requires large expenditures for construction of port facilities and railroads, which are economically feasible only for large-scale projects. For example, in 1963, Kaiser began the development of bauxite properties near the northern coast of Jamaica. This involved a five-year program costing approximately thirty million dollars. The project included dredging of a deep water channel at Discovery Bay; erection of a pier; installation of bauxite drying and storage facilities; construction of a ten-mile railroad from the harbor to bauxite deposits; and expansion of existing mining operations.

Stage 2. Alumina plants in Stage 2 of aluminum production require medium-sized economies of scale. The eight domestic alumina plants in existence in 1963 each had between 6.5 percent and 18.7 percent of the industry's capacity. (Figure 4) The smallest plant was owned by Ormet, with 6.5 percent of the total alumina capacity; the largest plant was owned by Alcoa with 18.7 percent of the industry's capacity. It would appear that 6.5 percent of the industry's capacity is a rough approximation of the minimum-sized alumina plant which can operate efficiently.

Stage 3. Stage 3 formerly required very large scale plants because of the need to construct private hydroelectric plants to generate power for aluminum reduction plants. Since World War II, however, this barrier to entry has been considerably reduced for two reasons: (1) the federal government has built a number of large power plants throughout the country, and (2) new advanced techniques in the extraction and utilization of gas, lignite, and bituminous coal have made thermal generation of electric energy competitive with hydroelectric power for the production of aluminum. Since one steam plant can efficiently supply one reduction plant with electric power, large-scale electric power plants are no longer required for the generation of electric energy.

Aside from the generation of power, the reduction process itself requires relatively small economies of scale since the process is carried out in numerous discrete production units called electric pots or cells. Only a very small percentage of the industry's capacity suffices to realize fully the the technological economies of a single reduction plant. The Anaconda plant in Montana, for example, was reported to be an extremely efficient plant, although it had only 3 percent of the industry's capacity. The comparatively low barrier to entry probably explains why five new primary producers have ventured into the reduction of primary aluminum in the last ten years.

In sum, the size of the barriers to entry in primary aluminum production attributable to economies of scale depends upon whether new firms enter the industry as fully or as partially integrated producers. If full vertical integration is attempted, then the new firm faces medium to high barriers to entry due to sizable economies of scale in Stages 1 and 2 of production. With partial integration--i. e., entry into aluminum reduction only--the size of the barrier to entry is considerably reduced.

B. CAPITAL REQUIREMENTS

Partial Integration

Aluminum is a high capital-cost industry. However, the size of the capital requirements in the aluminum industry again depends upon the degree of vertical integration. If entry into aluminum reduction alone is considered, the cost of an efficient-sized smelter is estimated at about $900 per ton of annual capacity or roughly two dollars of investment for each dollar of sales[16] However, the new 73,000 ton capacity smelter which Intalco is now building near Bellingham, Washington, amounts to roughly $1100 per ton of annual capacity.

Full Integration

Capital requirements for a fully integrated primary producer with bauxite deposits, alumina plants, shipping fleet, electric power and auxiliary facilities are estimated at somewhere between $1500 and $2000 per ton of reduction capacity.[17] These figures do not include investment in rolling mills and other fabricating units needed to market aluminum successfully. Ormet's integrated facilities for Stages 1 - 3, for example, built in the 1950's, was reported to cost $224 million plus an additional $17.5 million in initial working capital, amounting to approximately $1200 per ton of annual capacity. Undoubtedly the figure would be closer to $1500 per ton of reduction capacity at today's inflated prices. To finance the project, Ormet borrowed $100 million from 10 banks and in addition sold $100 million first mortgage notes to a group of institutional investors. The balance of the funds was provided by Olin Mathieson Chemical Corporation and Revere Copper and Brass, Inc., joint owners of the company.

C. PRODUCT DIFFERENTIATION

Product differentiation does not create a significant barrier to entry into the aluminum industry because aluminum ingot and mill-end items are standardized products manufactured either according to certain specifications or specially designed for each customer, as in casting and extrusions. To be sure, the integrated firms engage in some marketing promotion to differentiate their products from those of their rivals--stressing service, reliability, and so forth. Nevertheless, even if they succeed in building up some attachment for their products, the integrated firm finds that in general the independent fabricator buys from several sources of supply, provided they are all the same prices. Product differentiation is more pronounced in consumer end-product goods, but even in those items where it is important, it is less important than for products such as cigarettes and automobiles.

---

[16] Standard and Poor's Industry Surveys, Vol. II, Sept. 23, 1965, p. M 90.

[17] Ibid

D. ABSOLUTE COST DISADVANTAGES

The final barrier to entry arises from certain cost advantages which long established plants have over new entrants. This stems in part from the inflation of construction costs since the 1950's and in part from the availability of cheap hydroelectric power sites for the older capacity.[18] A further factor has been generous government assistance to the older capacity in the 1940's and 1950's. For example, the government's policy of accelerated amortization during World War II enabled Alcoa to depreciate fully much of its then existing capacity. Two of the primary producers, Reynolds and Kaiser, obtained considerable capacity from the federal government at the end of World War II at about one-third of the original cost. Similarly the 1950-55 expansion of primary reduction capacity was supported by generous government assistance to new entrants through tax incentives, accelerated write-offs, and profitable orders. At present, there are no comparable financial advantages to encourage entry.

On the other hand, absolute cost barriers in the aluminum industry are not so substantial as to preclude entry. It is true that in the early history of the industry, Alcoa derived its monopoly power from its control of the Hall patents in the reduction of aluminum. Today, however, the basic process is unpatented[19] and sufficient know-how is publicly available. In addition, raw materials essential to aluminum production are not completely controlled by existing firms, although new sources of bauxite presently require a considerable capital investment to develop.

---

[18] The newer plants utilize steam-generated power which is more costly to supply than cheap hydroelectric power.

[19] The process has been unpatented since the end of World War II, when the government sold its wartime aluminum plants to Kaiser and Reynolds. Since Alcoa completely controlled all the patents connected with aluminum production, the new companies could not start operations until some agreement had been reached with Alcoa on the use of her patents. After long negotiations, Alcoa finally agreed that all patents covering basic aluminum production processes would be turned over to the new companies outright; all other patents would be licensed to the new companies and royalties would be collected by Alcoa. It should be pointed out that to the extent that the latter patents are still essential for operation, they give Alcoa a cost advantage over the new firms. (See U. S. Dept. of Commerce Business and Defense Service Administration, Materials Survey: Aluminum, (Washington, D. C., Government Printing Office, No., 1956), VII - 20.

E. BARRIERS TO ENTRY AS AN INDEPENDENT FABRICATOR

Entry as an independent fabricator is easy compared to entry into primary aluminum production. The technology of most aluminum fabrication is such that the industry can support a rather large number of relatively small firms without loss of efficiency. Only in the fabrication of aluminum sheet metal are the economies of scale significant. Capital requirements are also nominal in aluminum fabrication, with the exception of rolling mills for aluminum sheet production. For example, Alcoa's rolling mill at Davenport, Iowa, built in the 1950's, cost $35 million as compared to $200,000 for a minimum-sized economical foundry, or $25,000 for a simple extrusion press. There is some product differentiation in aluminum end-use products, but most aluminum fabrications, such as mill-end shapes, are fairly well standardized.

Independent fabricators face a number of absolute cost disadvantages as compared with the integrated firms. Foremost, they are subject to price squeezes by integrated producers, who can reduce the spread between the ingot price and the fabricated product price. Since many fabricated lines are produced by small and financially weak firms, a price squeeze hurts the independents by forcing them to operate on very low profit margins. Second, independent firms are usually at a selling disadvantage since they are not able to match the large-scale marketing expenditures undertaken by integrated firms to sell new applications of aluminum. Finally in periods of peak demand, if primary producers tend to supply their own fabricating needs first, the non-integrated firms are forced to purchase secondary aluminum, an inferior substitute metal, at premium prices. However, the reduced tariff on aluminum ingot since 1958 has made imports of primary aluminum a ready source of supply for the independent fabricators. The latter are now, therefore, no longer as dependent on the supplies of the domestic primary producers.[20]

V. GROWTH OF DEMAND

Growth Rate of Market Demand Since World War II

The primary aluminum industry (Stages 1, 2, and 3) has been among the fastest growing in the nation's economy, experiencing a 73 percent increase in consumption during the years 1950-1964. (Figure 6) What are the factors responsible for aluminum's fast growth rate? Among the more important are: (1) aluminum's unique physical properties of light weight, corrosion resistance and conductivity; (2) its low cost relative to other nonferrous metals and materials; (3) the industry's aggressive research and products program to develop new uses for aluminum; (4) the industry's pricing policies to promote new end-product uses; and (5) the metal's expanding use in defense and space requirements of the federal government.

---

[20] Up to the late 1950's, the U. S. maintained a high tariff on aluminum ingot, alumina, and aluminum fabricated products. This tended to keep foreign imports out except at those times when the domestic price of aluminum rose high enough to permit imports to sell at prices competitive with domestic ingot, in spite of the tariff. In 1958 the tariff on alumina and aluminum ingot was reduced but maintained on fabricated aluminum. The duty on ingot imports is now 5% of the listed price. The U.S. is supporting further cuts at the Kennedy round of negotiations under the General Agreement on Tariffs and Trade. New York Times, Nov. 14, 1965, p. F-1.

Figure 7 shows the changing pattern of aluminum consumption in various uses for the years 1948 and 1964. The fastest growth in aluminum consumption has been in container packaging and electric wire and cable. However, both of these uses still constitute a small percentage of total aluminum consumption compared with the building and transportation industries. Growth in the latter industries has been considerable and today they consume nearly one-quarter of all the aluminum used in this country.

Growth in the consumption of aluminum has been largely at the expense of competing metals and materials. In the building-construction industry, aluminum has displaced wood in such construction applications as roofing, siding, doors, frames, and windows. In the construction of passenger cars, railroad freight cars, mass transit vehicles, and light-weight, mobile military equipment, aluminum has made steady gains as a substitute for steel. For example, the 1964 passenger car contained 72 pounds of aluminum as compared with 30 pounds in 1955. The doubling of aluminum's use in electric wire and cable since 1948 has been mostly at the expense of copper. The expanding use of aluminum for metal containers in the beverage field has made serious inroads in the market previously preempted by tin coated sheet steel (tinplate). The steel industry's recent development of "thin tin" at a lower price than aluminum was designed to halt aluminum's further expansion in the container field.

Although aluminum has shown remarkable growth in consumption since 1947, it should be pointed out that this growth fluctuates with the ups and downs of the economy as a whole. This is because the industry, like steel, is directly dependent on the heavy goods sector of the economy (construction, machinery, consumer durables, etc.) which is highly cyclical. Thus in times of general economic expansion, aluminum consumption exhibits a higher rate of growth than the average for the economy; while during economic slowdowns, it experiences a sharper decline in its rate of growth than the average.

Aluminum's cyclical tendency was not evident during the 1950's and the early 1960's because the industry was able to ship substantial amounts of unsalable metal to the government stockpile whenever demand declined.[21] If stockpile shipments are subtracted out from total aluminum sales during this period, however, the cyclical tendency of aluminum becomes clearly evident. Now that the government has ceased buying aluminum for stockpile purposes, this cushion against recession is no longer available to the industry. It is possible, however, that the aluminum industry's above average secular growth will provide some recession resistance.

VI. DEMAND ELASTICITY

Factors Influencing Elasticity of Demand for Aluminum

The elasticity of demand for aluminum is influenced by two major factors: (1) its degree of substitutability for various uses and (2) its price structure relative to competing metals. Where there is no substitute for aluminum's unique physical characteristics, such as in aircraft construction or sprinkler irrigation systems, demand is inelastic. On the other hand, where substitute metals such as copper and steel might be used equally well, demand is elastic. Should aluminum prices decrease in relationship to the prices of other metals, aluminum may expand into that area. Should the price of aluminum increase relative to the prices of the other metals, aluminum may lose ground to the other metals.

Demand for aluminum is more elastic in the long-run than in the short-run. This is related to the time factor involved in substituting aluminum for other metals. A manufacturer's decision to switch to aluminum usually involves a capital expenditure since it is necessary either to modify the product or the production process. The manufacturer will not be greatly influenced by short-run variations in the relative prices of competing metals. Rather, he will base his decision to switch metals on the long-run technical and economic feasibility of aluminum as a substitute input. This will depend on a number of factors: (1) the long-run price of aluminum relative to other metals, (2) the long-run price stability of aluminum relative to existing metal inputs, and (3) the willingness of primary producers to offer price discounts to overcome consumer resistance to new applications of aluminum.

---

[21] The stockpile took more than 20 percent of primary production in 1957 and 1958. During the entire period 1951-1963 the aluminum industry sold to the government stockpile a grand total of nearly two million tons of primary aluminum worth about $926 million. "Aluminum: A Study in Rollback Economics," Fortune, February, 1966, p. 108.

In short, the substitutability of aluminum for other metals has the following bearing on the elasticity of the short- and long-run demand curves of aluminum: (1) the short-run demand for aluminum is fairly price inelastic; (2) the long-run demand for aluminum is relatively price elastic; (3) a lower price is required to encourage new applications of aluminum than to retain buyers already familiar with aluminum and (4) long-run price stability is an important factor in increasing aluminum consumption.

UNIT II LESSON 8

TEACHERS' INFORMATION ON THE MARKET CONDUCT OF THE ALUMINUM INDUSTRY

1. PRICING IN THE ALUMINUM INDUSTRY

Introduction

Even though there are numerous products produced by the aluminum industry, the price quoted as the price of aluminum is the price of primary aluminum ingot. Changes in ingot prices are generally followed by identical markups in the list prices of fabricated products. For this reason, the way the aluminum ingot price is determined is of great importance since it affects the price level of the whole industry.

Aluminum ingot prices are not set by impersonal forces of supply and demand, as in a highly competitive market. Rather, individual firms in the industry normally set their prices according to some rule of thumb formula which is designed to assure the firm a certain percentage of profit over cost. These "list" prices are adjusted in response to changing market conditions, or to changes introduced by their rivals. Since aluminum metal is an undifferentiated product, this process of adjustment and response goes on very quickly and sensitively. Few purchasers will pay more for the aluminum of one producer than that of another. When one seller initiates a price change in such a market, the responses usually occur immediately, or else the seller's market shares would undergo great changes. The moves and counter-moves lead quickly to a new "market price."

In the aluminum industry, the prices of the different sellers are usually not coordinated by impersonal market forces, since this is likely to result in price warfare. Rather, prices in this highly concentrated industry are coordinated through the mechanism of price leadership, which has the advantage of removing the element of uncertainty about rival behavior. As a result, the pricing policies of the industry demonstrate the following tendencies: (1) price uniformity, (2) price leadership, and until recently, (3) price rigidity.

Price Uniformity

Price uniformity, i. e., all firms listing an identical price, is the dominant characteristic of primary aluminum prices. In the entire period since 1947, there is not one instance of non-uniform list prices for aluminum ingot among the rival aluminum firms. If rival sellers would charge different prices rather than uniform prices in such an undifferentiated industry, buyers of primary aluminum would shift their patronage to the lowest price firm. Given the standard characteristics of the primary aluminum product, unless there are secret price cuts, only one price can possibly prevail in the industry.

Price Leadership

Producers in the aluminum industry coordinate their own price "listings" through the mechanism of price leadership. Until 1958, Alcoa was the leader of the aluminum industry; she was generally the first to announce a price change which her competitors would quickly follow. Departures from Alcoa's leadership were infrequent and could usually be explained by special circumstances. Alcoa was the price leader for the industry during this period for a number of reasons: (1) her long experience in the production and marketing of primary aluminum prior to the entry of new producers; (2) her initial low cost advantage over rival producers; and (3) her dominance in the industry in terms of primary production and capacity. Since 1958, however, Alcoa's role as price leader has been challenged on three fronts: (1) by her Canadian rival, Aluminium Limited, (2) by her domestic rivals in the industry, and more recently (3) by the U. S. government. Although these challenges to her leadership may have weakened her position, Alcoa still remains the industry price leader through her veto power over any price changes initiated by other firms in the industry. In no instance since 1958 has a price change stuck without Alcoa concurring in the action initiated by her rivals.

Alcoa's Pricing Policy, 1947-1957. Alcoa has traditionally favored keeping the price of aluminum ingot low as the best means of promoting the long-run growth in sales and profits of the industry. During the period 1947-1957, when the demand for aluminum was growing faster than the existing capacity could supply, Alcoa's low price policy was in frequent conflict with the price preference of her domestic rivals, who pressured for higher prices to gain high short-run profits. Yet Alcoa stuck to the low price policy, partly because she felt it would contribute to the long-run growth of the industry, and partly because she was in a more favorable financial position to pursue such a policy than her rivals. First, as the low-cost producer of the industry for many years, she could "afford" a lower price than the other domestic producers. Second, as the longest established firm in the industry, she was not under the same pressure as the newer producers to demonstrate a high rate of return on capital in the short-run in order to attract funds for future expansion and modernization of facilities. Third, as a former monopolist who was convicted under the Sherman Anti-Trust Act, she was more concerned with the public relations aspects of price increases than her rivals.

Aluminium Limited Challenges Alcoa's Leadership. During the years 1958-1960, Alcoa's traditional price leadership was threatened for the first time by her Canadian rival, Aluminium Limited. At this time, the growth in demand for aluminum failed to keep pace with the tremendous expansion of reduction capacity which had taken place both in the United States and Canada in the 1950's.[1] At the same time, the United States and Canadian primary producers were meeting stiff price competition from two sources: (1) substitute metals such as copper and steel and (2) primary aluminum producers in Europe--including Russia--who were also suffering from excess capacity. Canada's Limited was particularly hurt by this price cutting, since she was more dependent than the United States on her export market. To make primary aluminum prices more competitive, Canada's Limited abandoned her previous passive pricing policy[2] and initiated two price reductions, one in 1958 and the other in 1960.[3] Limited's action could not be ignored. With the Canadian producer's ability to skirt the American tariff, Alcoa had no choice but to bow to her low-cost rival's leadership. On both occasions, Alcoa matched Limited's price reduction and was promptly followed in her action by the other domestic primary producers.

---

[1] Prior to 1958, Limited's approach was to accept the announced prices in the country in which she traded rather than to compete pricewise. This was understandable in view of the company's dependence on exports. An aggressive low price policy might otherwise have resulted in trade restrictions excluding it from its main markets. See "Aluminium Limited, Unlimited Aluminum," Fortune, June, 1954, p. 108.

[2] The unexpected buoyancy of the world economy in the middle 1950's coupled with the outbreak of hostilities in Korea gave impetus to large-scale expansion of capacity in primary aluminum. Domestically the expansion was partly encouraged by the Defense Production Act of 1950, which ordered the industry to double its capacity above the prevailing market demand in order to build up the aluminum stockpile. In return the Government gave the industry "put rights" to sell to the stockpile any aluminum in the new plants not taken up by defense needs.

[3] The price cut in 1958 was the first the U. S. primary producers faced since 1941. Prices had risen steadily from a low of 14 cents at the beginning of World War II to 26 cents in 1958.

Domestic Rivals Challenge Alcoa's Leadership. Since 1963 Alcoa has had to contend with repeated challenges from her domestic rivals for price leadership. In both 1963 and 1964, although demand still had not caught up with capacity, Kaiser and Reynolds attempted to initiate increases in the price of primary aluminum in order to improve the industry's profit rate. Each time, however, Alcoa vetoed their actions forcing Kaiser and Reynolds to back down. Alcoa justified her pricing decisions on a number of grounds. First, the price of ingot abroad had not increased. With duties on foreign primary aluminum extremely low it was impossible to ignore import competition. Second, aluminum was still meeting stiff competition from substitute metals such as copper and steel and needed to keep its prices competitive with these metals, if it was to expand its end-product market. Third, Alcoa was possibly concerned that a higher price for ingot might attract new entry into the industry--a factor partly responsible for the over-expansion of the 1950's.

In June, 1964, however, the new economic developments in the industry made Alcoa finally accede to her rivals' desire for a price rise. Growth in demand was causing primary aluminum production to catch up with reduction capacity. At the same time industry costs rose significantly following a wage settlement with the U. S. Steel Workers Union which provided for a wage increase estimated between 3.5 percent to 4.1 percent a year. The time seemed ripe for the industry to press for a price rise which it had long favored. Olin Mathieson Chemical Corporation, the major owner of Ormet, a relatively minor producer of aluminum, took the first step--a probing action designed to see how Alcoa and the rest of the industry felt. After an all-day closed session, Alcoa announced she would go along with the price change initiated by Olin, citing the large wage settlement in the spring of 1964 as the basis for the price increase. Following Alcoa's action, Canada's Limited also announced a price increase as did Reynolds and Kaiser.

The U. S. Government Challenges Alcoa's Leadership. Recently the U. S. Government has become a new force in determining industry pricing policy. In late October, 1965, Olin followed by Reynolds and Kaiser announced they were raising ingot prices by 1/2 cent a pound from 24-1/2 cents to 25 cents. For months, the aluminum producers had insisted they needed higher prices citing among a host of reasons: (1) the high cost industry wage settlement in the spring of 1964, (2) the tight demand situation that had aluminum capacity pressed to the limit, and (3) the fact that prices in the industry still remained below the level of 1960 and have risen less than competing metals. Whether the new rise could be made to stick depended entirely on whether Alcoa would go along. While Alcoa was studying the move, the U. S. Government stepped into the picture announcing its disapproval of the price increase. It called the price boost inflationary and in conflict with the government wage-price guideposts.[4]

The government strongly hinted that if the industry would not rescind the price increase, it would sell the surplus aluminum from its stockpile in large enough amounts in order to counteract the industry price rise.[5] At first Alcoa refused to bend to government pressure and announced instead it would join the rest of the industry in higher aluminum prices. In fact, Alcoa went beyond her domestic competitors and announced an increase of a full cent a pound on fabricated aluminum.[6] Alcoa's spokesman for the industry contended that higher prices were "imperative" if the industry were to achieve a level of earnings adequate to: (1) finance the company's program to expand and modernize plant facilities, (2) sponsor new product research and development "vital to growth and opportunities for employment" and (3) attain an "adequate return" on its existing investment in facilities.[7]

Following Alcoa's action, the government abruptly broke off stockpile negotiations with the aluminum industry and announced instead that it would sell 200,000 tons of surplus aluminum in the open market in 1966 in order to "relieve price pressure." Aluminum spokesmen for the industry angrily attacked the decision as a "dumping" action and gave no sign that they meant to rescind their price boost. However, following behind the scenes government pressure, Alcoa suddenly announced it would comply with the government's wishes and cancel its price rise.[8] She was quickly followed by all the other big producers, including Canada's Limited. In announcing its price roll-back, Alcoa gave as its reason the government's concern about the possible effect of any general adverse price increase on the national economy while the Vietnam war was being waged.[9]

---

[4] The wage-price guideposts are voluntary standards for labor and industry devised by the President's Council of Economic Advisers to maintain stability in the general price level.

[5] At this time the government was negotiating with aluminum industry leaders for a controlled release of the 1.4 million ton stockpile of surplus aluminum.

[6] Alcoa has been more interested in raising mill product prices than her rivals since 80 percent of Alcoa's aluminum sales on a tonnage basis are fabricated products as compared with 65 percent for Reynolds and 60 percent for Kaiser.

[7] New York Times, November 6, 1965, p. 33.

[8] According to industry sources, White House pressure was reported to be in the form of threats to withdraw defense and other government contracts for aluminum, initiate anti-trust investigations of industry practices, and to review power-supply contracts between aluminum makers and federal power plants, unless the price rise was rescinded. Wall Street Journal, Nov. 11, 1965, p. 3.

[9] Wall Street Journal, November 11, 1965, p. 3

Price Rigidity.

Theoretically, price rigidity should be a common characteristic of the aluminum industry given the inelastic demand for aluminum in the short run and the elastic demand, in the long run. In a period of excess capacity, a price reduction would reduce the total revenue of the company. Furthermore, a price cut by one firm would be met by rivals immediately so that it would be of no great advantage to the price cutter. On the other hand, during a period of excess demand, that is, when demand is greater than capacity, a price rise would jeopardize the long-run growth demand for aluminum and thereby reduce long-run profits for the industry.

Although aluminum ingot prices have demonstrated a steady upward trend from 1941 to 1958 because of rising industry costs, primary aluminum prices (the price of ingot) nevertheless followed a fairly rigid pricing pattern until 1958. For example, during the period 1947-57, there were five and a half years in which there was an excess demand for primary aluminum, i. e., at the current price the buyers were willing to buy more than the current output. Evidence of excess demand was indicated by a price for secondary aluminum that was significantly higher than the price for primary aluminum in each of those years. (See Figure 14) Yet aluminum prices showed great stability during those years and did not take full advantage of high short-run profits.

Since 1958, however, aluminum ingot prices have changed back and forth much more (See Table 1), demonstrating that primary producers have less control over prices than formerly. For example, from 1960 to 1963, prices were *reduced* three times because of idle capacity and competition from imports and substitute metals. From 1963 to 1965, prices were *increased* four times as demand accelerated with the growth of the domestic economy. Despite the large number of price rises, however, prices had only partially recovered in 1965, being 2 percent below 1960 prices and over 5-1/2 percent below 1957 prices, the base year in metal pricing.

Rigidity of Ingot Prices Compared to Fabricated Prices. Although competitive factors have made primary prices less rigid in recent years, prices of primary aluminum change far less often and its price reductions are far less drastic than are price changes for fabricated products. The high profit rates in fabricated aluminum in the 1950's attracted a large number of small and financially weak firms to the industry. When excess capacity in fabricated aluminum arose in 1958, these fabricators who were dependent upon high volume to survive resorted to heavy discounting from listed prices in order to hold customers. This practice has continued to the present time so that despite expanding demand for aluminum in the latter half of 1965, fabricated price rises have been smaller than price rises

---

[10] By price rigidity, we mean that prices do not change often and do not fluctuate up and down reflecting changes in demand and supply.

TABLE 1

Prices of Aluminum Ingot in New York

1957-64

(price per pound in cents)

Year	High	Low	Average
1957	26.0	25.0	25.4
1958	26.0	24.0	24.8
1959	25.3	24.7	24.8
1960	26.0	26.0	26.0
1961	26.0	24.0	25.4
1962	24.0	22.5	23.8
1963	23.0	22.5	22.6
1964	24.3	23.0	23.7
1965	24.5	24.5	24.5

Source: *Standard and Poor's Industrial Surveys*, Vol. II, Sept. 23, 1965, p. M93.

for primary aluminum. For example, in September, 1965, while primary metal was selling at only 1-1/2 cents per pound, below its earlier high, prices on some important fabricated products were as much as 10 cents per pound lower than in the mid-1950's.

Price Discrimination. Price discrimination is a practice frequently employed by the integrated primary producers. It has been used in recent years to accomplish three purposes: (1) to capture markets from competing metals, (2) to force independent fabricator competitors out of business and (3) to invade markets previously preempted by the secondary smelters and their customers, i. e., auto castings. Price discrimination has taken three major forms: (1) "commodity price cutting," (2) price squeezes" and (3) "hot metal" deals. Each will be described in turn.

Commodity Price Cutting. A major weapon of the integrated firms in their battle for new markets for aluminum has been "commodity pricing"--selling a standard product at a lower price than the published price in a specific market. It is a promotional tool that allows a product to gain a foothold in a new market--such as metal containers--in which it can't compete at the published price. Once the market for the new product is established, it is hoped the price can be restored to a profitable level when volume has lowered costs. During the period 1960-1963, commodity price cutting proved self-defeating since it ended up as price warfare between companies. In December, 1963, Alcoa took direct action to improve the deteriorating situation. She threatened broad retaliation if the rest of the primary industry persisted in the item-by-item price cutting. Although she did not succeed in eliminating this practice, with the improvement in demand for fabricated aluminum beginning in 1964, commodity pricing has now become less prevalent.

Price Squeezes. In recent years, independent fabricators have complained that they are being squeezed between the prices they have to pay the integrated producers for primary aluminum and semi-fabricated shapes and the price at which the major producers sell their own fabricated products in competition with the independents. This kind of "Big Three" practice is illustrated by the recent anti-trust suit filed by Columbia Metal Products, Inc., against Kaiser and Alcoa in September, 1965. According to the complaint, Kaiser, Columbia and Alcoa were the only three producers of alcad wire rod, used in making wire insect screening. Columbia was forced to buy her primary metal from Kaiser and Alcoa, the only producers of the aluminum ingot from which the screening was made. To squeeze out Columbia, Kaiser and Alcoa boosted the price of the ingots to Columbia, and at the same time kept cutting the price of their screening, forcing Columbia to do likewise. Caught by this squeeze, which started in 1958 and continued to 1964, Columbia was compelled to sell out or else face bankruptcy after suffering a loss of

$3 million.[11]

"Hot Metal Deals". Since the late 1950's, the two largest primary producers, Reynolds and Alcoa, are reported to have made special price concessions to the major automobile companies, General Motors and Ford,[12] in order to expand the castings market for primary aluminum. They have agreed to sell molten aluminum--called "hot metal" in the trade--at prices 10 percent below the list price of aluminum for use in the auto companies foundries. According to the primary producers, the discount price reflects cost savings resulting from the elimination of several production processes. The secondary smelters on the other hand maintain the price discounts are greater than actual cost savings and therefore are discriminatory. These contracts have offset the advantage independent die casters previously had by using lower-cost secondary metal. Since 80 percent of secondary smelters' production go to foundries and die casters, the secondary smelters have lost a significant share of the market for automobile castings, their major market for years.[13]

2. NONPRICE COMPETITION

Nonprice competition is limited in its scope in the aluminum industry because aluminum metal and mill products are for the most part highly standardized. Nevertheless, it has been an important mechanism for increasing the market shares of firms in the aluminum industry and frequently has proven more effective than price cutting.

Major Marketing Techniques. Marketing activities take a variety of forms in the aluminum industry. The major techniques include: (1) the build-up of a large sales organization to promote the sale of new aluminum products; (2) the development of aluminum service centers throughout the country not only to expand the aluminum market but also to handle small orders more efficiently;[14] (3) the use of advertisements, news stories, television and other means of communication to keep the public informed about new developments in the industry. Whatever the form of advertising media, each firm attempts to differentiate its product from its rival by stressing such factors as service, reliability, and performance. For example, Alcoa's nationwide advertising program in 1964 was built around the theme: "Change for the better with Alcoa Aluminum."[15] While advertising costs are substantial--especially for promoting aluminum end-products--they are nevertheless considerably below such highly differentiated consumer products as cigarettes and automobiles.[16]

---

[11] San Francisco Chronicle, September 11, 1965.

[12] Leonard W. Weiss, Economics and American Industry, (New York: John Wiley and Sons, July, 1962), p. 195.

[13] Although the secondary smelters' share of the market has dropped from 100 to 50 percent, their total business has doubled so that their total volume has not declined. Adams, op. cit., p. 223.

[14] Alcoa, for example, has 28 firms operating 87 metal service centers. During 1964, they accounted for approximately 20 percent of total Alcoa tonnage sales of the products handled. Alcoa's 1964 Annual Report, p. 8.

Other Forms of Nonprice Competition. The major emphasis of the integrated firms in recent years has been to move into end-product manufacturing where the fastest growth in the industry is taking place. The primary producers have done this by various tactics: (1) acquisition of manufacturing companies already in existence through mergers, (2) investing in a new company and contracting for a company to operate it, and (3) manufacturing finished products, such as home siding or outdoor telephone booths, in direct competition with their customers for aluminum ingot.

Some of these methods have been challenged as violations of the anti-trust acts. For example, the Justice Department has recently ruled that Alcoa's merger with Cupple Product Corporation, a fabricator of wall and aluminum curtain-wall was illegal because it tended to reduce competition in the production of aluminum curtain wall. In October, 1965, the Supreme Court sustained the findings of the Justice Department and required Alcoa to divest itself of its aluminum wall-fabricating plants.[17]

One of the newest marketing techniques for the promotion of end-product sales has been direct entry into the construction business, which presently constitutes the largest single market

---

[14] Alcoa, for example, has 28 firms operating 87 metal service centers. During 1964 they accounted for approximately 20 percent of total Alcoa tonnage sales of the products handled. Alcoa's 1964 Annual Report, p. 8.

[15] Ibid.

[16] The annual reports of the primary producers lump sales and general administrative expenditures together so that it is not possible to determine sales expenses separately from these figures. Total sales and all general administrative expenditures together constitute about 10 percent of sales revenue. From the comments in the trade literature, sales efforts alone involve somewhere in the neighborhood of $30 million or more for a primary producer.

[17] Wall Street Journal, October 12, 1965, p. 28.

for aluminum.[18] Alcoa, for example, is presently building Century City near Los Angeles in partnership with the noted developer, William Zechendorf. This huge project will encompass 88 apartment houses, stores, and office buildings. As an indication of the scope of this new activity, Alcoa has recently organized a new subsidiary, Alcoa Properties, Inc., just to handle its real estate management and development. The undertaking of such a large-scale development project undoubtedly excludes the non-integrated fabricators from an important share of construction projects.

---

[18] The construction business at present constitutes approximately 24 percent of the end-product sales of aluminum. For example, today one out of every four industrial and office buildings uses aluminum curtain-wall panels. The average new home contains 235 pounds of aluminum compared with 50 pounds in 1950.